Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	139	(recording near5 (layer or film$1)) and (((ge or germanium) near8 (te or tellurium)) near8 (sb or antimony)) near8 (sn or tin)	EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/19 11:33
L2	216	((recording near5 (layer or film$1)) or phase) and (((ge or germanium) near8 (te or tellurium)) near8 (sb or antimony)) near8 (sn or tin)	EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/19 11:32
L3	174	l2 and @ad<"20010611"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/19 10:38
L4	6	jp-2001322357-$.did. or jp-02014289-$.did. or us-20050058941-$.did.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/19 10:39
L5	533	(((ge or germanium) near8 (te or tellurium)) near8 (sb or antimony)) near8 (sn or tin)	EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/19 11:33
L6	293189	(opticla or laser or information) near5 (medium or media or disk or disc)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/19 11:34
L7	502759	(optical or laser or information) near5 (medium or media or disk or disc)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/19 11:37
L8	104	l5 and l7	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/10/19 11:38

Freeform Search

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Derwent World Patents Index
IBM Technical Disclosure Bulletins

Term: WO-200054982-$.did.

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Search History

DATE: Wednesday, October 19, 2005 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR			
L21	WO-200054982-$.did.	1	L21
L20	WO-2000054982-$.did.	0	L20
L19	WO-2000054982-A1.did.	0	L19
DB=EPAB; PLUR=YES; OP=OR			
L18	WO-200054982-A1.did.	0	L18
DB=JPAB; PLUR=YES; OP=OR			
L17	JP-2000605034-X.did.	0	L17
DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR			
L16	us-20050058941-$.did.	1	L16
L15	l13 not l14	9	L15
L14	L11 and @ad<20000713	165	L14
L13	L11 and @ad<20010426	174	L13
L12	L11 and @ad<20010611	174	L12
L11	(L9 or phase) and l8	216	L11
L10	L9 and l8	139	L10

L9	(recording near5 (layer or film$1))	120851	L9
L8	(((ge or germanium) near8 (te or tellurium)) near8 (sb or antimony)) near8 (sn or tin)	533	L8
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR			
L7	L6 and l4	153	L7
L6	(recording near5 (layer or film$1)) with ((thick or thickness) near5 ((1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9) adj2 nm))	1452	L6
L5	(recording near5 (layer or film$1)) with ((thick or thickness) near5 nm)	3798	L5
L4	(((ge or germanium) near8 (te or tellurium)) near8 (sb or antimony)) near8 (sn or tin)	1803	L4
L3	(((ge or germanium) near8 (te ot tellurium)) near8 (sb or antimony)) near8 (sn or tin)	1803	L3
L2	us-6751184-$.did.	2	L2
L1	jp-2000036130-$.did. or jp-02147289-$.did. or ep-957477-$.did. or ep-810590-$.did.	7	L1

END OF SEARCH HISTORY

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                   to core patent offices
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 NEWS 11  OCT 13   New CAS Information Use Policies Effective October 17, 2005
 NEWS 12  OCT 17   STN(R) AnaVist(TM), Version 1.01, allows the export/download
                   of CAplus documents for use in third-party analysis and
                   visualization tools

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               MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 13 JUNE 2005

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=> file reg
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.21       0.21

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=> s te 2-25/mac
         10688 TE/MAC
        608468 2-25/MAC
L1        2040 TE 2-25/MAC
                 (TE/MAC (P) 2-25/MAC)

=> s sb 4-44.5/mac
         17950 SB/MAC
        557595 4-44.5/MAC
L2        6718 SB 4-44.5/MAC
                 (SB/MAC (P) 4-44.5/MAC)

=> s sge 10-31/mac
             0 SGE/MAC
        381147 10-31/MAC
L3           0 SGE 10-31/MAC
                 (SGE/MAC (P) 10-31/MAC)

=> s ge 10-31/mac
         14743 GE/MAC
        381147 10-31/MAC
L4        4770 GE 10-31/MAC
                 (GE/MAC (P) 10-31/MAC)

=> s sn 0-20/mac
         54834 SN/MAC
        762575 0-20/MAC
L5       37992 SN 0-20/MAC
                 (SN/MAC (P) 0-20/MAC)

=> s l1 and l2 and l3
L6           0 L1 AND L2 AND L3

=> s te/mac
L7       10688 TE/MAC

=> s ge/mac
L8       14743 GE/MAC
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=> s sb/mac
L9       17950 SB/MAC

=> s ns/mac
L10          0 NS/MAC

=> s sn/mac
L11      54834 SN/MAC

=> s l7 and l8
L12       3241 L7 AND L8

=> s l12 and l9
L13       1835 L12 AND L9

=> s l13 and l11
L14        146 L13 AND L11

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COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                   ENTRY    SESSION
FULL ESTIMATED COST                               48.58      48.79

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=> s l14
L15         44 L14

=> d all 1-44

L15  ANSWER 1 OF 44  CAPLUS  COPYRIGHT 2005 ACS on STN
AN   2005:1048633  CAPLUS
ED   Entered STN:  30 Sep 2005
TI   Multilayered phase-change type recoding materials and method for
     reproduction of the recorded information with blue ray
IN   Shinkai, Masaru; Shinozuka, Michiaki; Iwasa, Hiroyuki
PA   Ricoh Co., Ltd., Japan
SO   Jpn. Kokai Tokkyo Koho, 24 pp.
     CODEN: JKXXAF
DT   Patent
LA   Japanese
IC   ICM  B41M005-26
     ICS  G11B007-004; G11B007-24; G11B007-26
CC   74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
     Reprographic Processes)
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     --------------      ----   --------    --------------------   --------
PI   JP 2005262778        A2    20050929    JP 2004-81662          20040319
PRAI JP 2004-81662              20040319
```

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005262778	ICM	B41M005-26
	ICS	G11B007-004; G11B007-24; G11B007-26
JP 2005262778	FTERM	2H111/EA04; 2H111/EA23; 2H111/FA02; 2H111/FA11; 2H111/FA12; 2H111/FA14; 2H111/FB05; 2H111/FB06; 2H111/FB09; 2H111/FB12; 2H111/FB15; 2H111/FB16; 2H111/FB17; 2H111/FB18; 2H111/FB19; 2H111/FB20; 2H111/FB21; 2H111/FB23; 2H111/FB29; 2H111/FB30; 5D029/JA01; 5D029/JB13; 5D029/JB35; 5D029/NA11; 5D029/RA01; 5D090/AA01; 5D090/BB03; 5D090/BB05; 5D090/BB12; 5D090/CC14; 5D090/KK06; 5D121/AA01; 5D121/EE03

AB The recording materials comprises a substrate equipped with .gtoreq.2 information layers including a recording layer which is laminated in optically separable distances against the incident angle of a laser beam. The semi-transparent layer in the recording layer contains Ge-SnTe and near eutectic SbTe and its compn. is within the area defined by points (Ge-Sn,Sb,Te) A [(Ge-Sn)29,Sb36,Te35], B [(Ge-Sn)25,Sb36,Te39], C [(Ge-Sn)10,Sb57.6,Te32.4], and D [(Ge-Sn)10,Sb68,Te22], in a 3-component diagram. The recording layer may also contain .ltoreq.10 at.% of Ag, In, Ge, Se, Sn, Al, Ti, V, Mn, Fe, Co, Ni, Cu, Zn, Ga, Bi, Si, Dy, Pd, Pt, Au, S, B, C, and/or P. Information is recorded and reproduced with incident light of 380-430 nm, from the 1st information layer side of the material. The material is rewritable at high speed and the may be used for CD-R, CD-RW, DVD+RW, DVD-RW, DVD-RAM, etc.

ST blue ray multilayered phase change recording disk; germanium tin antimony tellurium phase change recording disk

IT Optical disks
(phase-change; recording and reprodn. of multilayered phase-change type disks with blue ray)

IT ***336884-30-1***
RL: TEM (Technical or engineered material use); USES (Uses)
(recording and reprodn. of multilayered phase-change type disks with blue ray)

IT 7429-90-5, Aluminum 7429-91-6, Dysprosium 7439-89-6, Iron 7439-96-5, Manganese 7440-02-0, Nickel 7440-05-3, Palladium 7440-06-4, Platinum 7440-21-3, Silicon 7440-22-4, Silver 7440-31-5, Tin 7440-32-6, Titanium 7440-42-8, Boron 7440-44-0, Carbon 7440-48-4, Cobalt 7440-50-8, Copper 7440-55-3, Gallium 7440-56-4, Germanium 7440-57-5, Gold 7440-62-2, Vanadium 7440-66-6, Zinc 7440-69-9, Bismuth 7440-74-6, Indium 7704-34-9, Sulfur 7723-14-0, Phosphorus 7782-49-2, Selenium
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(recording layers contg.; recording and reprodn. of multilayered phase-change type disks with blue ray)

L15 ANSWER 2 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:1004022 CAPLUS
DN 143:296828
ED Entered STN: 16 Sep 2005
TI Circuit board and method for manufacturing the same
IN Ishimaru, Yukihiro; Nakatani, Seiichi; Saito, Yoshiyuki
PA Matsushita Electric Industrial Co., Ltd., Japan
SO U.S. Pat. Appl. Publ., 31 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM H05K001-00
INCL 174250000
CC 76-2 (Electric Phenomena)
Section cross-reference(s): 48, 56, 57
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2005199420	A1	20050915	US 2005-75578	20050308
PRAI JP 2004-67845	A	20040310		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES

US 2005199420 ICM H05K001-00
INCL 174250000
US 2005199420 NCL 174/250.000

AB In a circuit board according to the present invention, on a substrate, in at least a portion of a phase change layer including a phase change material that is capable of changing alternately between an elec. insulating state and an elec. conductive state, a conductive path is formed that was put into an elec. conductive state by a phase change in the phase change layer, wherein the phase change material includes a chalcogenide semiconductor, changes between the elec. insulating state and the elec. conductive state by irradn. of laser light, goes into the elec. conductive state in a cryst. phase, and goes into the elec. insulating state in an amorphous phase. In this way, a conductive path is formed by irradiating laser light onto a phase change layer using phase change in a phase change layer formed from a phase change material that is capable of changing alternately between an elec. insulating state and an elec. conductive state, and therefore very small-dimension minute vias and conductors can be formed. Also, subsequent repair, rework, or trimming also is easy.

ST amorphous chalcogenide phase change material PCB fabrication

IT Laser crystallization
Laser radiation
Metal lines
Phase change materials
Printed circuit boards
(fabrication of printed circuit board using laser sensitive phase-change materials)

IT Chalcogenides
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(fabrication of printed circuit board using laser sensitive phase-change materials)

IT Chalcogenide glasses
RL: TEM (Technical or engineered material use); USES (Uses)
(fabrication of printed circuit board using laser sensitive phase-change materials)

IT Interconnections, electric
(vias; fabrication of printed circuit board using laser sensitive phase-change materials)

IT 1312-41-0 1327-50-0, Antimony telluride (Sb2Te3) 7440-21-3, Silicon, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-38-2, Arsenic, uses 7440-56-4, Germanium, uses 7440-74-6, Indium, uses 7704-34-9, Sulfur, uses 7782-49-2, Selenium, uses 12025-37-5 12025-39-7, Germanium telluride (GeTe) 12064-03-8 12067-31-1, Antimony telluride (SbTe) 13494-80-9, Tellurium, uses 16150-49-5, Antimony germanium telluride (Sb2Ge2Te5) 26741-94-6, Antimony tin telluride (Sb2SnTe4) 53632-72-7 64085-19-4, Antimony 2 germanium 15 sulfur 2 tellurium 81 (atomic) 83857-20-9, Antimony, germanium, indium 85703-41-9 87715-69-3 97576-92-6 109824-00-2 113644-78-3 123352-77-2, Germanium, gold, tellurium, tin 158282-93-0 ***336884-30-1*** , Antimony, germanium, tellurium, tin
RL: TEM (Technical or engineered material use); USES (Uses)
(fabrication of printed circuit board using laser sensitive phase-change materials)

L15 ANSWER 3 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:979258 CAPLUS
DN 143:251640
ED Entered STN: 08 Sep 2005
TI Manufacture of grain-oriented electromagnetic steel sheet
IN Shitara, Eitaro
PA JFE Steel Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C21D008-12
ICS B21B001-02; B21B001-26; B21B003-02; C21D009-46; C22C038-00; C22C038-60; H01F001-16
CC 55-11 (Ferrous Metals and Alloys)
Section cross-reference(s): 77

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005240158	A2	20050908	JP 2004-54971	20040227
PRAI	JP 2004-54971		20040227		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005240158	ICM	C21D008-12
	ICS	B21B001-02; B21B001-26; B21B003-02; C21D009-46; C22C038-00; C22C038-60; H01F001-16
JP 2005240158	FTERM	4E002/AA07; 4E002/AD02; 4E002/BC07; 4E002/BD01; 4E002/BD09; 4E002/CB10; 4K033/AA02; 4K033/BA01; 4K033/BA02; 4K033/CA01; 4K033/CA02; 4K033/CA03; 4K033/CA04; 4K033/CA07; 4K033/CA09; 4K033/FA01; 4K033/FA13; 4K033/FA14; 4K033/GA00; 4K033/HA03; 4K033/LA01; 4K033/RA04; 4K033/SA02; 4K033/SA03; 4K033/TA02; 5E041/AA11; 5E041/BD05; 5E041/CA02; 5E041/CA04; 5E041/HB11; 5E041/NN01; 5E041/NN17

AB The title sheet is manufd. from steel contg. C 0.020-0.090, Si 2.0-4.5, Mn 0.02-0.10, Se 0.01-0.04, and Cu 0.005-0.50, Sn 0.01-0.25, and/or Sb 0.005-0.15 wt.% and controlled to S .ltoreq.0.0020 wt.% by steps of (1) forming a slab having a concave in the longitudinal direction, (2) heating at .gtoreq.1300.degree. in a furnace, (3) transporting the slab to a rough rolling mill by placing the concave side down and keeping slab bottom surface temp. .gtoreq.1200.degree., (4) hot rolling and cold rolling to give final sheet thickness, (5) decarburizing, (6) primary recrystn. annealing, and then (7) final annealing. Optionally, the steel contains (i) Al 0.006-0.10, N 0.004-0.015 and/or (ii) Cr 0.01-0.15, Te 0.005-0.1, Ge 0.005-0.1, As 0.005-0.1, Bi 0.005-0.1, Mo 0.005-0.1 wt.%. The resulting sheet, esp. suitable for transformer cores, etc., provides low surface defects.

ST rolling grain oriented electromagnetic steel

IT Transformers
(cores; rolling of grain-oriented electromagnetic steel sheet for low surface defects)

IT Rolling (metals)
(rolling of grain-oriented electromagnetic steel sheet for low surface defects)

IT 7727-37-9, Nitrogen, uses 7782-49-2, Selenium, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(microalloying element; rolling of grain-oriented electromagnetic steel sheet for low surface defects)

IT 85424-57-3, processes 106050-46-8 110124-96-4 126693-25-2 146178-27-0 147467-54-7 451446-02-9 863496-32-6 ***863496-33-7***
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(rolling of grain-oriented electromagnetic steel sheet for low surface defects)

L15 ANSWER 4 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2005:492955 CAPLUS

DN 143:35194

ED Entered STN: 10 Jun 2005

TI Phase change-type optical information recording medium having bismuth-based crystallization promotion layer, manufacture thereof, and multivalued mark recording method

IN Shibata, Kiyoto; Kaneko, Yujiro; Hanaoka, Katsushige; Yuzuhara, Hajime

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-24
ICS G11B007-0045; G11B007-125; G11B007-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 75

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI	JP 2005149616	A2	20050609	JP 2003-385480	20031114
PRAI	JP 2003-385480		20031114		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005149616	ICM	G11B007-24
	ICS	G11B007-0045; G11B007-125; G11B007-26
JP 2005149616	FTERM	5D029/JA01; 5D029/JB11; 5D090/AA01; 5D090/BB05; 5D090/CC01; 5D090/FF12; 5D090/KK03; 5D090/KK06; 5D121/AA01; 5D121/EE27; 5D789/AA22; 5D789/BA01; 5D789/BB04; 5D789/DA01; 5D789/HA45

AB The invention relates to a process for manufg. a phase change-type optical information recording medium via the steps of forming a crystn. promotion layer, forming a Sb/Te-based recording layer, forming an impurity layer contactting the crystn. promotion layer and the recording layer, and mixing the crystn. promotion layer, the recording layer and the impurity layer.

ST phase change optical recording disk bismuth crystn promotion layer

IT Crystallization
Optical disks
(manuf. of phase change-type optical information recording medium having bismuth-based crystn. promotion layer)

IT 7440-69-9, Bismuth, processes 63058-67-3 105606-40-4 212206-00-3 544443-02-9 852693-28-8 ***852693-29-9*** ***852693-30-2*** ***852693-31-3*** ***852693-32-4*** 852693-33-5 852693-34-6 852693-35-7
RL: DEV (Device component use); EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(manuf. of phase change-type optical information recording medium having bismuth-based crystn. promotion layer)

L15 ANSWER 5 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:426518 CAPLUS
DN 142:472661
ED Entered STN: 19 May 2005
TI Two-layer phase-change information recording medium and recording method
IN Iwasa, Hiroyuki; Shinotsuka, Michiaki; Shinkai, Masaru
PA Ricoh Company, Ltd., Japan
SO PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM B41M005-26
ICS G11B007-24; G11B007-0045
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005044575	A1	20050519	WO 2004-JP16139	20041029
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	JP 2005153496	A2	20050616	JP 2004-153506	20040524
	JP 3679107	B2	20050803		
PRAI	JP 2003-376003	A	20031105		
	JP 2004-153506	A	20040524		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2005044575	ICM	B41M005-26
	ICS	G11B007-24; G11B007-0045
JP 2005153496	FTERM	2H111/EA03; 2H111/EA04; 2H111/EA12; 2H111/EA23;

2H111/EA31; 2H111/EA36; 2H111/FA02; 2H111/FA11;
2H111/FA12; 2H111/FA14; 2H111/FA23; 2H111/FA25;
2H111/FB04; 2H111/FB05; 2H111/FB06; 2H111/FB08;
2H111/FB09; 2H111/FB12; 2H111/FB15; 2H111/FB16;
2H111/FB17; 2H111/FB19; 2H111/FB21; 2H111/FB22;
2H111/FB23; 2H111/FB27; 2H111/FB28; 2H111/FB29;
5D029/HA06; 5D029/JA01; 5D029/JB13; 5D029/JB18;
5D029/JB35; 5D029/KB14; 5D029/LB02; 5D029/MA13;
5D029/MA14; 5D029/MA27; 5D090/AA01; 5D090/BB05;
5D090/BB12; 5D090/CC02; 5D090/CC14; 5D090/DD01;
5D090/EE01; 5D090/EE05; 5D090/EE11; 5D090/FF12

AB The invention relates to a two-layer phase change information recording medium wherein a first recording layer comprises a material represented by the empirical formula: Sb.alpha.1 Te.beta.1 Ge.gamma.1 M1.delta.1, and a second recording layer comprises a material represented by the empirical formula: Sb.alpha.2 Te.beta.2 Ge.gamma.2 M2.delta.2, wherein each of M1 and M2 is at least one element selected from among Ag, In, Se, Sn, Al, Ti, V, Mn, Fe, Co, Ni, Cu, Zn, Ga, Bi, Si, Dy, Pd, Pt, Au, S, B, C and P and satisfy .alpha.1 + .beta.1 + .gamma.1 + .delta.1 = .alpha.2 + .beta.2 + .gamma.2 + .delta.2 = 100 at. %, 50 .ltoreq. .alpha.1 .ltoreq. 75, 25 .ltoreq. .beta.1 .ltoreq. 40, 0 < .gamma.1 .ltoreq. 10, 0 .ltoreq. .delta.1 .ltoreq. 10, 60 .ltoreq. .alpha.2 .ltoreq. 85, 15 .ltoreq. .beta.2 .ltoreq. 30, 0 < .gamma.2 .ltoreq. 10, 0 .ltoreq. .delta.2 .ltoreq. 10, and .beta.2 + .gamma.2 < .beta.1 + .gamma.1 .ltoreq. .beta.2 + .gamma.2 + 20. The above two-layer phase change information recording medium is excellent in the erasure ratio of each layer, exhibits an improved dynamic range, and can achieve the multi-level recording.

ST phase change information recording

IT Erasable optical disks
(phase-change; two-layer phase-change information recording medium and recording method)

IT Optical recording
(two-layer phase-change information recording medium and recording method)

IT 384829-32-7 479063-02-0 717887-71-3 851761-10-9 851761-11-0
851761-12-1 851761-13-2 851761-14-3 851761-15-4 851761-16-5
851761-17-6 851761-18-7 ***851761-19-8*** 851761-20-1
851761-21-2 851761-22-3
RL: DEV (Device component use); USES (Uses)
(recording layers in two-layer phase-change information recording medium)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Matsushita Electric Industrial Co Ltd; EP 1187119 A2 2002 CAPLUS
(2) Matsushita Electric Industrial Co Ltd; JP 2002144736 A 2002 CAPLUS
(3) Matsushita Electric Industrial Co Ltd; US 20254983 A1 2002
(4) Mitsubishi Chemical Corp; EP 1117094 A2 2001
(5) Mitsubishi Chemical Corp; US 200112253 A1 2001
(6) Mitsubishi Chemical Corp; JP 2001273638 A 2001 CAPLUS
(7) Ricoh Co Ltd; EP 1296315 A2 2003 CAPLUS
(8) Ricoh Co Ltd; JP 2003100020 A 2003 CAPLUS
(9) Ricoh Co Ltd; JP 2003242676 A 2003 CAPLUS
(10) Ricoh Co Ltd; US 200358763 A1 2003
(11) Toray Industries Inc; JP 02-112987 A 1990 CAPLUS

L15 ANSWER 6 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:302595 CAPLUS
DN 142:382274
ED Entered STN: 08 Apr 2005
TI Rewritable phase-change optical disks and method for recording thereon
IN Hanaoka, Katsushige; Shibata, Kiyoto; Kaneko, Yujiro; Iwasa, Hiroyuki
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24
ICS B41M005-26; G11B007-0045
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1
PATENT NO. KIND DATE APPLICATION NO. DATE

PI	JP 2005093027	A2	20050407	JP 2003-328587	20030919
PRAI	JP 2003-328587		20030919		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005093027	ICM	G11B007-24
	ICS	B41M005-26; G11B007-0045
JP 2005093027	FTERM	2H111/EA03; 2H111/EA23; 2H111/FA01; 2H111/FA11; 2H111/FA12; 2H111/FA21; 2H111/FA25; 2H111/FA27; 2H111/FA31; 2H111/FB03; 2H111/FB04; 2H111/FB05; 2H111/FB06; 2H111/FB07; 2H111/FB09; 2H111/FB10; 2H111/FB12; 2H111/FB17; 2H111/FB19; 2H111/FB21; 2H111/FB22; 2H111/FB23; 2H111/FB28; 2H111/FB29; 5D029/JA01; 5D029/JB18; 5D029/JB46; 5D029/JB47; 5D029/JC02; 5D029/KB14; 5D029/LA17; 5D029/LA19; 5D029/RA03; 5D029/RA05; 5D029/RA08; 5D029/RA17; 5D029/RA42; 5D029/RA43; 5D029/RA45; 5D029/RA48; 5D029/WA20; 5D029/WD10; 5D090/AA01; 5D090/BB05; 5D090/BB20; 5D090/CC01; 5D090/DD03; 5D090/EE02; 5D090/FF13; 5D090/KK05; 5D090/KK06

AB The title disk has a second substrate, a resin layer, a reflective layer, a first dielec. layer, a recording layer, and a second dielec. layer on a first substrate and is recorded with 405 nm laser beam coming through a second substrate, wherein the first and second substrate have the same thickness, wherein the first substrate has grooves arranged in circular or spiral, wherein the second substrate does not have a groove, and wherein the unrecorded recording layer has 8-25 % of reflectance towards blue light. The optical disk stores large amt. of data with a 405 nm laser beam and is interchangeable with DVD.

ST rewritable phase optical disk recording

IT Optical recording
(laser; rewritable phase-change optical disks and method for recording thereon)

IT Erasable optical disks
(phase-change; rewritable phase-change optical disks and method for recording thereon)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(dielec. layers; rewritable phase-change optical disks and method for recording thereon)

IT 849439-41-4 849439-42-5 ***849439-43-6***
RL: DEV (Device component use); USES (Uses)
(recording layer; rewritable phase-change optical disks and method for recording thereon)

IT 7440-22-4, Silver, uses
RL: DEV (Device component use); USES (Uses)
(reflective layer; rewritable phase-change optical disks and method for recording thereon)

L15 ANSWER 7 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:993014 CAPLUS
DN 141:403564
ED Entered STN: 19 Nov 2004
TI Phase changeable optical recording material and sputtering target
IN Tashiro, Hiroko; Ito, Kazunori; Deguchi, Hiroshi; Kato, Masaki; Abe, Mikiko; Sekiguchi, Hiroyoshi; Harigai, Masato; Shinkai, Masaru
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM B41M005-26
ICS C22C012-00; G11B007-24; G11B007-26
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2004322630	A2	20041118	JP 2004-29923	20040205
WO 2005075212	A1	20050818	WO 2004-JP11148	20040804

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,

CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK,
LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO,
NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
SN, TD, TG

PRAI JP 2003-29119 A 20030206
JP 2004-29923 A 20040205

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004322630	ICM	B41M005-26
	ICS	C22C012-00; G11B007-24; G11B007-26
JP 2004322630	FTERM	2H111/EA04; 2H111/EA23; 2H111/EA33; 2H111/EA40; 2H111/FA11; 2H111/FA12; 2H111/FA14; 2H111/FA25; 2H111/FB05; 2H111/FB06; 2H111/FB09; 2H111/FB12; 2H111/FB17; 2H111/FB19; 2H111/FB21; 2H111/FB30; 2H111/GA03; 5D029/JA01; 5D029/JB35; 5D029/LB07; 5D029/MA14; 5D029/NA07; 5D121/AA01; 5D121/EE09; 5D121/GG07; 5D121/GG26

AB The material comprises a transparent support successively coated with 1st protective layer, a phase-changeable recording layer, 2nd protective layer, and a reflection layer, in which the recording layer comprises Sn.alpha.Sb.beta.Ga.gamma.Ge.delta. [.alpha. + .beta. + .gamma. + .delta. = 100 (at%); .alpha. = 5-25; .beta. = 40-91; .gamma. = 2-20; .delta. = 2-20] and is reversibly changes between crystal and amorphous phases. Sputtering target for the recording layer comprises Sn.alpha.Sb.beta.Ga.gamma.Ge.delta. [.alpha. = 5-25; .beta. = 40-91; .gamma. = 2-20; .delta. = 2-20; .alpha. + .beta. + .gamma. + .delta. = 100 (at%)]. The material is easy for initial crystn., suited for high linear velocity recording, shows high sensitivity, and over-writing property.

ST phase changeable optical recording material; tin antimony gallium germanium optical recording material; sputtering target optical recoding material

IT Erasable optical disks
Sputtering targets
(optical recording material and sputtering target contg. tin antimony gallium germanium)

IT Optical recording materials
(phase changeable; optical recording material and sputtering target contg. tin antimony gallium germanium)

IT 7631-86-9, Silicon oxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(interfacial layer between protective layer and recording layer; optical recording material and sputtering target contg. tin antimony gallium germanium)

IT 790673-07-3 790673-09-5 790673-11-9 790673-12-0 790673-13-1
790673-14-2 790673-15-3 790673-16-4 790673-18-6 790673-20-0
790673-22-2 790673-24-4 790673-26-6 790673-28-8 790673-30-2
790673-31-3 ***790673-32-4***
RL: TEM (Technical or engineered material use); USES (Uses)
(optical recording material and sputtering target contg. tin antimony gallium germanium)

L15 ANSWER 8 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:985963 CAPLUS
DN 141:418010
ED Entered STN: 18 Nov 2004
TI Optical information recording medium and method
IN Nagata, Kenichi; Kusada, Hideo
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM G11B007-24
ICS G11B007-26
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other

Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1477978	A2	20041117	EP 2004-11574	20040514
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
	JP 2005004950	A2	20050106	JP 2004-141160	20040511
	US 2004228259	A1	20041118	US 2004-845271	20040514
	CN 1551164	A	20041201	CN 2004-10044702	20040517
PRAI	JP 2003-138818	A	20030516		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1477978	ICM	G11B007-24
	ICS	G11B007-26
JP 2005004950	FTERM	5D029/HA06; 5D029/JA01; 5D029/JB16; 5D029/JB35; 5D029/LA13; 5D029/LA14; 5D029/LA15; 5D029/LA16; 5D029/LB07; 5D029/LC06; 5D029/LC13; 5D029/LC18; 5D029/MA14; 5D121/AA01; 5D121/AA04; 5D121/AA05; 5D121/JJ08
US 2004228259	NCL	369/275.100

AB The present invention pertains to an information recordable and erasable, phase-change optical disk, particularly to a 4.7GB DVD-RAM disk. Provided is a recording medium having a short tact time in layer formation, and superior jitter characteristics, cross erasing characteristics, and cycle characteristics. The recording medium has at least a reflective layer, a recording layer, a light-incident-side protective layer, a first resin layer, and a light-incident-side substrate in this order on a substrate formed with a guide groove. The first resin layer is formed over the recording layer by a gap between 1 nm and 50 nm. This allows a small thickness of light-incident side protective layer and a small gap between the recording layer and the first resin layer to be used, which improves tact time, while also securing repeatability of erasing.

ST recordable erasable phase change recording disk DVDRAM DVD

IT Erasable optical disks
(optical information recording medium and method)

IT 7631-86-9, Silica, uses 115638-63-6, Aluminum 97, titanium 3 (atomic) 206752-31-0, Chromium 30, germanium 70 (atomic) 210891-38-6, Germanium nitride (Ge0.7N0.3) 330671-06-2, DVD 003 ***793684-32-9*** 793684-33-0, Zinc oxide sulfide thiosilicate (ZnO0.4S0.2(SiS4)0.2)
RL: TEM (Technical or engineered material use); USES (Uses)
(optical information recording medium and method)

L15 ANSWER 9 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:970772 CAPLUS

DN 142:201445

ED Entered STN: 15 Nov 2004

TI Tin alloy anodes for lithium secondary batteries

IN Jung, Jae Han; Kang, Yong Muk; Kim, Gi Tae; Lee, Gi Yeong; Lee, Jae Yeong; Park, Seong Cheol

PA Lg Chem. Ltd., S. Korea

SO Repub. Korean Kongkae Taeho Kongbo, No pp. given
CODEN: KRXXA7

DT Patent

LA Korean

IC ICM H01M004-62

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	KR 2003015775	A	20030225	KR 2001-49677	20010817
PRAI	KR 2001-49677		20010817		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
KR 2003015775	ICM	H01M004-62

AB This additive for Sn alloys prevents the vol. change of a Sn alloy and does not form a Li2O phase. The additive is selected from (a) chalcogenide compds., (b) metal oxides, and (c) a mixt. of (a) and (b). The chalcogenide compd.(a) is a compd. contg. at least one element(s) selected from S, Se, and Te. The Sn alloy-based anode material comprises

Sn and the selected additive. The anode material is a compd. represented by SnSaSebTecAsdGeeSifPgSbhAgi wherein a, b, c, d, e, f, g, h, and i are independently real no., 0-1, and at least one of a, b and c is not 0.

ST tin alloy additive anode lithium battery

IT Secondary batteries
(lithium; tin alloy anodes for lithium secondary batteries)

IT Battery anodes
(tin alloy anodes for lithium secondary batteries)

IT Tin alloy, base
RL: DEV (Device component use); USES (Uses)
(tin alloy anodes for lithium secondary batteries)

IT ***836627-61-3***
RL: DEV (Device component use); USES (Uses)
(tin alloy anodes for lithium secondary batteries)

L15 ANSWER 10 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:965166 CAPLUS

DN 141:418008

ED Entered STN: 12 Nov 2004

TI Phase-change recording material and information recording medium

IN Ohno, Takashi; Horie, Michikazu

PA Mitsubishi Chemical Corporation, Japan

SO PCT Int. Appl., 110 pp.
CODEN: PIXXD2

DT Patent

LA Japanese

IC ICM B41M005-26
ICS G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004096567	A1	20041111	WO 2004-JP6112	20040428
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2004345349	A2	20041209	JP 2004-132085	20040427
US 2005175822	A1	20050811	US 2005-104542	20050413
PRAI JP 2003-125803	A	20030430		
WO 2004-JP6112	A1	20040428		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004096567	ICM	B41M005-26
	ICS	G11B007-24
WO 2004096567	ECLA	G11B007/24S
JP 2004345349	FTERM	2H111/EA04; 2H111/EA23; 2H111/EA36; 2H111/EA37; 2H111/EA40; 2H111/FA01; 2H111/FA12; 2H111/FA14; 2H111/FA23; 2H111/FA27; 2H111/FA28; 2H111/FB05; 2H111/FB06; 2H111/FB09; 2H111/FB12; 2H111/FB21; 5D029/JA01; 5D029/JB18; 5D029/JB35; 5D029/LA14; 5D029/LA15; 5D029/LA16; 5D029/LA17; 5D029/LB01; 5D029/LB07; 5D029/MA13
US 2005175822	NCL	428/195.100

AB A phase-change recording material enabling high-speed recording/erasure, excellent in recording signal characteristics, high in recorded signal storage stability, small in variation in reflectivity to the recorded signal even after long-term storage, and exhibiting an excellent recording signal characteristic even if overwrite is conducted again. An information recording medium using the material is also disclosed. The phase-change recording material is characterized in that the main component has a compn. expressed by formula Gex(InwSn1-w)yTezSb1-x-y-z (where the content of Sb is larger than any of those of Ge, In, Sn, and

Te, and x, y, z and w representing the ratios among the nos. of atoms satisfy (i) 0.ltoreq.x.ltoreq.0.3, (ii) 0.07.ltoreq.y-z, (iii) w.times.y-z.ltoreq.0.1, (iv) 0<z, (v) (1-w).times.y.ltoreq.0.35, and (vi) 0.35.ltoreq.1-x-y-z).

ST phase change recording material rewritable disk

IT Erasable optical disks
(phase-change recording material and information recording medium showing improved overwrite properties)

IT ***791621-14-2*** ***791621-16-4*** 791621-17-5
791621-18-6 ***791621-19-7*** ***791621-21-1***
791621-23-3
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(phase-change recording material and information recording medium showing improved overwrite properties)

IT 1306-38-3, Cerium oxide, processes 1314-13-2, Zinc oxide, processes 1314-98-3, Zinc sulfide, processes 12064-98-1, Germanium nitride (GeN) 12340-04-4, Yttrium oxide sulfide (Y2O2S)
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(protective coating layer; phase-change recording material and information recording medium showing improved overwrite properties)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Eastman Kodak Co; JP 04-501742 A 1992
(2) Eastman Kodak Co; EP 445148 A 1992 CAPLUS
(3) Eastman Kodak Co; US 4904577 A 1992 CAPLUS
(4) Hitachi Ltd; US 20030064211 A1 2003
(5) Hitachi Ltd; JP 200391872 A 2003
(6) Lg Electronics Inc; JP 09-293269 A 1997
(7) Lg Electronics Inc; GB 2312083 A 1997 CAPLUS
(8) Lg Electronics Inc; US 5789055 A 1997
(9) Mitsubishi Chemical Corp; EP 1107244 A2 2001 CAPLUS
(10) Mitsubishi Chemical Corp; US 20010003641 A1 2001
(11) Mitsubishi Chemical Corp; JP 2001331973 A 2001 CAPLUS
(12) Mitsubishi Chemical Corp; EP 1293974 A1 2002 CAPLUS
(13) Mitsubishi Chemical Corp; JP 200174741 A 2002
(14) Mitsubishi Chemical Corp; US 20020114915 A1 2002

L15 ANSWER 11 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:817806 CAPLUS
DN 141:340485
ED Entered STN: 07 Oct 2004

TI Information recording medium and method for manufacturing same

IN Suenaga, Taeko; Kojima, Rie; Nishihara, Takashi; Yamada, Noboru
PA Matsushita Electric Industrial Co., Ltd., Japan

SO PCT Int. Appl., 102 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM B41M005-26
ICS G11B007-24; G11B007-26
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004085167	A1	20041007	WO 2004-JP3331	20040312

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI JP 2003-79994 A 20030324

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004085167	ICM	B41M005-26
	ICS	G11B007-24; G11B007-26
WO 2004085167	ECLA	G11B007/26S

AB An information recording medium comprising a recording layer wherein a reversible phase change between the cryst. phase and the amorphous phase is caused by an optical means or an elec. means is characterized in that the recording layer contains Ge, Te, M1 (which represents at least one element selected among Sc, Y, La, Ce, Pr, Nd, Sm, Gd, Tb, Dy, Ho, Er, Yb, and Lu), M2 (which represents at least one of Sb and Bi), and M3 (which represents at least one of Te and Bi).

ST optical recording medium manuf germanium tellurium DVD RAM sputtering

IT Optical disks
Optical memory devices
Optical recording materials
Sputtering
Sputtering targets
(information recording medium showing excellent storage stability and method for manufg. same by sputtering)

IT ***770747-46-1*** 770747-47-2 770747-48-3 770747-49-4
770747-50-7 770747-51-8 770747-52-9 770747-53-0 770747-54-1
770747-55-2 770747-56-3 770747-57-4 770747-58-5 770747-59-6
770747-60-9 770747-61-0 770747-62-1 770747-63-2 770747-64-3
770747-65-4 770747-66-5 770747-67-6 770747-68-7 770747-69-8
770747-70-1 770747-71-2 770747-72-3 770747-73-4 770747-74-5
770747-75-6 770747-76-7 770747-77-8 770747-78-9 770747-79-0
770747-80-3 770747-81-4 770747-82-5 770747-83-6 770747-84-7
770747-85-8 770747-87-0 770747-88-1 770747-89-2 770747-90-5
770747-91-6 770747-92-7 770747-93-8 770747-94-9 770747-95-0
770747-96-1 770747-97-2 770747-98-3 770747-99-4 770748-00-0
770748-01-1 770748-02-2 770748-03-3 770748-04-4 770748-05-5
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(information recording medium showing excellent storage stability and method for manufg. same by sputtering)

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Hitachi Ltd; JP 07-223372 A 1995 CAPLUS
(2) Matsushita Electric Industrial Co Ltd; EP 1102252 A2 2001 CAPLUS
(3) Matsushita Electric Industrial Co Ltd; US 20010005350 A1 2001
(4) Matsushita Electric Industrial Co Ltd; JP 2001243655 A 2001 CAPLUS
(5) Matsushita Electric Industrial Co Ltd; JP 2001273673 A 2001 CAPLUS
(6) Matsushita Electric Industrial Co Ltd; US 6432502 B1 2001
(7) Matsushita Electric Industrial Co Ltd; US 20020168587 A1 2002 CAPLUS
(8) Matsushita Electric Industrial Co Ltd; JP 2002352472 A 2002 CAPLUS
(9) Ricoh Co Ltd; US 20020160306 A1 2002 CAPLUS
(10) Ricoh Co Ltd; JP 2002225436 A 2002 CAPLUS
(11) Ricoh Co Ltd; JP 2002293029 A 2002 CAPLUS
(12) Ricoh Co Ltd; JP 2002301869 A 2002 CAPLUS
(13) Ricoh Co Ltd; JP 2002304767 A 2002 CAPLUS
(14) Ricoh Co Ltd; JP 2002337451 A 2002 CAPLUS
(15) Tdk Corp; WO 0185464 A1 2002 CAPLUS
(16) Tdk Corp; US 20020015816 A1 2002
(17) Tdk Corp; JP 200279757 A 2002

L15 ANSWER 12 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:200145 CAPLUS
DN 140:243655
ED Entered STN: 12 Mar 2004
TI Phase change recording with crystallization improving layer
IN Kojima, Rie; Yamada, Noboru; Kitaura, Hideki
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM G11B007-24
ICS G11B007-26; B41M005-26
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1396853	A2	20040310	EP 2003-26442	20000324
	EP 1396853	A3	20040317		
	EP 1396853	B1	20050831		
	R: DE, FR, GB				
	EP 1039448	A2	20000927	EP 2000-302413	20000324
	EP 1039448	A3	20011114		
	EP 1039448	B1	20050601		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI	JP 1999-83312	A	19990326		
	JP 1999-326537	A	19991117		
	EP 2000-302413	A3	20000324		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1396853	ICM	G11B007-24
	ICS	G11B007-26; B41M005-26
EP 1396853	ECLA	B41M005/26; G11B007/24R; G11B007/243; G11B007/257; G11B007/26S
EP 1039448	ECLA	B41M005/26; G11B007/0045P; G11B007/24; G11B007/24R; G11B007/243; G11B007/252; G11B007/257; G11B007/26; G11B007/26S

AB An information recording medium includes at least a recording layer (5) formed on a substrate (1), the recording layer (5) including a phase change layer (4) in which a reversible phase change is caused between a cryst. state and an amorphous state by irradn. of a light beam, and a crystn.-ability improving layer (3) comprising possibly SnTe for improving a crystn. ability of the phase change layer. The crystn.-ability improving layer (3) is formed before the phase change layer (4) is formed. Thus, crystal nucleus generation and crystal growth are caused during formation of the phase change layer (4), so that at least a portion of the phase change layer (4) is in the cryst. phase after the formation. Thus, information signals can be recorded/reproduced at a high d. and a high linear velocity, and thus the present invention provides a highly reliable optical information recording medium. Further, the present invention provides an information recording medium that allows a recording operation to be performed on the recording layer in the as-depo amorphous state without the initialization process.

ST phase change optical recording material crystn improving layer

IT Optical disks
(phase change recording medium with crystn. improving layer)

IT 87715-69-3
RL: TEM (Technical or engineered material use); USES (Uses)
(crystn. improving and recording layer; phase change recording medium with crystn. improving layer comprising eutectic)

IT 1304-82-1, Bismuth telluride (Bi2Te3) 1327-50-0, Antimony telluride (Sb2Te3) 7440-36-0, Antimony, uses 7681-49-4, Sodium fluoride, uses 7783-40-6, Magnesium fluoride 7783-49-5, Zinc fluoride 7784-18-1, Aluminum fluoride 7787-32-8, Barium fluoride 7789-23-3, Potassium fluoride 7789-24-4, Lithium fluoride, uses 7789-75-5, Calcium fluoride, uses 8049-25-0 13494-80-9, Tellurium, uses 13709-38-1, Lanthanum fluoride 25583-20-4, Titanium nitride 25658-42-8, Zirconium nitride 50954-23-9 97576-92-6 127860-50-8, Bismuth germanium telluride 668481-02-5 668481-03-6
RL: TEM (Technical or engineered material use); USES (Uses)
(crystn. improving layer; phase change recording medium with crystn. improving layer)

IT 12064-98-1, Germanium nitride (GeN)
RL: TEM (Technical or engineered material use); USES (Uses)
(interface layer; phase change recording medium with crystn. improving layer)

IT 16150-49-5, Antimony germanium telluride (Sb2Ge2Te5) 109824-00-2 137510-83-9 138700-39-7 138788-24-6 172486-58-7 177078-77-2 188010-51-7 ***336884-30-1*** 668481-04-7 668481-05-8 668481-06-9 668481-07-0 668481-08-1
RL: TEM (Technical or engineered material use); USES (Uses)
(phase change recording medium with crystn. improving layer)

IT 1314-98-3, Zinc sulfide, uses 7440-56-4, Germanium, uses 7631-86-9, Silica, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(protective layer; phase change recording medium with crystn. improving layer)

IT 158282-93-0
RL: TEM (Technical or engineered material use); USES (Uses)
(recording layer; phase change recording medium with crystn. improving layer)

IT 11145-71-4
RL: TEM (Technical or engineered material use); USES (Uses)
(reflection layer; phase change recording medium with crystn. improving layer)

L15 ANSWER 13 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:717285 CAPLUS
DN 139:237792
ED Entered STN: 12 Sep 2003
TI Phase-change recording material used for an information recording medium
IN Michikazu, Horie; Takashi, Ohno
PA Mitsubishi Chemical Corporation, Japan
SO Eur. Pat. Appl., 45 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1343154	A2	20030910	EP 2003-4463	20030227
	EP 1343154	A3	20040804		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	JP 2004203011	A2	20040722	JP 2003-56996	20030304
	CN 1442853	A	20030917	CN 2003-120231	20030305
PRAI	JP 2002-59005	A	20020305		
	JP 2002-202744	A	20020711		
	JP 2002-322708	A	20021106		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1343154	ICM	G11B007-24
EP 1343154	ECLA	G11B007/243
JP 2004203011	FTERM	2H111/EA04; 2H111/EA23; 2H111/EA31; 2H111/EA36; 2H111/FA12; 2H111/FA14; 2H111/FA23; 2H111/FB05; 2H111/FB06; 2H111/FB09; 2H111/FB12; 2H111/FB15; 2H111/FB16; 2H111/FB17; 2H111/FB19; 2H111/FB21; 2H111/FB23; 2H111/FB29; 2H111/FB30; 5D029/JA01; 5D029/JB18; 5D029/MA13

AB The present invention relates to a phase-change recording material used for an information recording medium utilizing a cryst. state as a non-recorded state and an amorphous state as a recorded state, which has the compn. of: (Sb1-xSnx) 1-y-w-zGeyTewM1z, (x, y, z and w represents atomicity, x, z and w are nos. which satisfy 0.01 .ltoreq.x.ltoreq.0.5, 0.ltoreq.z.ltoreq.0.3 and 0.ltoreq.w.ltoreq.0.1, resp., and the element M1 is at least one element selected from the group consisting of In, Ga, Pt, Pd, Ag, rare earth elements, Se, N, O, C, Zn, Si, Al, Bi, Ta, W, Nb and V; and (I) when z = 0 and w = 0, yr is a no. which satisfies 0.1.ltoreq. y.ltoreq.0.3, (II) when 0<z.ltoreq.0.3 and w = 0, yr is a no. which satisfies 0.05.ltoreq.y.ltoreq.0.3, and (III) when 0.ltoreq.z.ltoreq.0.3 and 0<w.ltoreq.0.1, yr is a no. which satisfies 0.01.ltoreq.y.ltoreq.0.3).

ST phase change recording material information medium

IT Optical recording materials
(phase-change recording material used for information recording medium)

IT Telluride glasses
RL: DEV (Device component use); USES (Uses)
(phase-change recording material used for information recording medium contg.)

IT 7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-56-4, Germanium, uses 13494-80-9, Tellurium, uses 595560-64-8 595560-65-9 ***595560-66-0*** 595560-67-1 595560-68-2 595560-69-3 595560-70-6 595560-71-7 595560-72-8 595560-73-9 ***595560-74-0***

595560-75-1 595560-76-2 595560-77-3 595560-78-4 595560-79-5
595560-80-8 595560-81-9
RL: DEV (Device component use); USES (Uses)
(telluride glasses; phase-change recording material used for information recording medium contg.)

L15 ANSWER 14 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:685863 CAPLUS
DN 139:221674
ED Entered STN: 03 Sep 2003
TI Phase-changeable optical recording material containing antimony and tellurium
IN Harigai, Masato; Tani, Katsuhiko; Tashiro, Hiroko; Iwata, Kaneyuki; Yuzuhara, Hajime; Suzuki, Eiko; Mizutani, Miki; Onagi, Nobuaki; Miura, Hiroshi; Ito, Kazunori; Kageyama, Yoshiyuki
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM B41M005-26
ICS G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003246140	A2	20030902	JP 2002-47503	20020225

PRAI JP 2002-47503 20020225
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003246140	ICM	B41M005-26
	ICS	G11B007-24

AB In the material recorded and read by phase change between crystal and amorphous phase caused electromagnetic beam irradn., the recording layer contains Sb, Te, and elements A and B, in which local structures around A are almost the same and that around B are different before and after the phase change. The material is suited for high linear seed and high d. recording and shows good durability and storage stability.
ST optical recording material antimony tellurium; phase change optical recording material local structure
IT Optical recording materials
(phase-changeable optical recording material contg. antimony and tellurium)
IT 590374-45-1 590374-46-2 590374-47-3 590374-48-4 590374-49-5
590374-50-8 590374-51-9 ***590374-52-0*** 590374-53-1
590374-54-2
RL: DEV (Device component use); USES (Uses)
(phase-changeable optical recording material contg. antimony and tellurium)

L15 ANSWER 15 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:389848 CAPLUS
DN 138:376508
ED Entered STN: 21 May 2003
TI Phase-changeable optical recording material
IN Harigai, Masato; Miura, Hiroshi; Tashiro, Hiroko; Suzuki, Eiko; Yuzuhara, Hajime; Mizutani, Miki; Kageyama, Yoshiyuki
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM B41M005-26
ICS G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003145944	A2	20030521	JP 2001-352363	20011116

PRAI JP 2001-352363 20011116

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003145944	ICM	B41M005-26
	ICS	G11B007-24

AB The material, recorded, read, and erased by phase change between crystal and amorphous phases, has a recording layer contg. Pd, Ge, Sb, Te and .gtoreq.1 element having abs. viscosity 20-120 g/cm.cntdot.s at about 540.degree.. The material shows good durability in repeated use, and is suited for high linear velocity and d. recording.

ST optical recording material phase change crystal amorphous; palladium germanium antimony tellurium optical recording material

IT Optical recording materials
(phase-changeable optical recording material contg. palladium, germanium, antimony, tellurium, and other element)

IT ***522599-78-6*** 522599-79-7 522599-80-0 522599-81-1 522599-82-2 522599-83-3
RL: DEV (Device component use); USES (Uses)
(phase-changeable optical recording material contg. palladium, germanium, antimony, tellurium, and other element)

L15 ANSWER 16 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:352875 CAPLUS

DN 139:252425

ED Entered STN: 09 May 2003

TI Advanced dual-layer phase-change optical disc

AU Satoh, Isao; Yamada, Noboru

CS Storage Media Systems Development Center, Matsushita Electric Industrial Co., Ltd., 1006 Kadoma, Kadoma, Osaka, 571-8501, Japan

SO Proceedings of SPIE-The International Society for Optical Engineering (2003), 5060(Optical Storage), 138-144
CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB Multilayer optical recording is a promising technol. for increasing a disk capacity using an optical pickup identical to that used for a single-layer optical disk. A capacity of 25 GB - 50 GB is required to record 2 - 4 h HD-TV program. In this paper, the phys. format of the dual-layer phase-change optical disk is studied and exptl. results of an advanced dual-layer phase-change optical disk, of which first layer is characterized by a transmittance-balanced structure and prepd. by a new replication process, are shown and discussed. The transmittance-balanced structure disk is realized by adopting Ge(Sn)-Sb-Te film that has appropriate optical consts. and optimizing the thickness of dielec. layers. The signal of the second-layer in the transmittance-balanced structure disk is able to read and write without any influence of the first-layer. A capacity of over 50 GB is demonstrated by the transmittance-balanced structure disk.

ST advanced dual layer phase change rewritable optical disk DVD

IT Optical constants
Optical transmission
Thickness
(design and properties of dual-layer phase-change rewritable optical disk)

IT Optical recording materials
(erasable, phase-change; design and properties of dual-layer phase-change rewritable optical disk)

IT Erasable optical disks
(phase-change; design and properties of dual-layer phase-change rewritable optical disk)

IT Silver alloy, base
RL: TEM (Technical or engineered material use); USES (Uses)
(design and properties of dual-layer phase-change rewritable optical disk)

IT Aluminum alloy, base
RL: TEM (Technical or engineered material use); USES (Uses)
(reflective layer; design and properties of dual-layer phase-change rewritable optical disk)

IT 1314-98-3, Zinc sulfide, properties 7631-86-9, Silica, properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(dielec. layer; design and properties of dual-layer phase-change rewritable optical disk)
IT 51845-89-7, Germanium nitride
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(interface layer; design and properties of dual-layer phase-change rewritable optical disk)
IT 390387-46-9
RL: TEM (Technical or engineered material use); USES (Uses)
(lower recording layer; design and properties of dual-layer phase-change rewritable optical disk)
IT ***444310-97-8***
RL: TEM (Technical or engineered material use); USES (Uses)
(upper recording layer; design and properties of dual-layer phase-change rewritable optical disk)
RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Anon; News Release, http://www.matsushita.co.jp/corp/news 2002
(2) Borg, H; Tech Digest of ISOM2000 2000, VWe-B-01
(3) Bruneau, J; Jpn J Appl Phys 1998, V37, P2168 CAPLUS
(4) Furumiya, S; ODS2001, Post-deadline Papers 2001
(5) Furumiya, S; Tech Digest of ISOM/ODS2002 2002, VWB.2
(6) Hayama, A; Tech Digest of MORIS2000 2000, VWeK-01
(7) Hayashi, K; Tech Digest of ISOM2001 2001, VPd-33
(8) Ichimura, I; Proc Of SPIE 2002, V4342, P168 CAPLUS
(9) Kato, M; Tech Digest of ISOM2000 2000, VTh-I-03
(10) Kishi, T; Jpn Soc Appl Phys 1995 Autumn Meeting 1995
(11) Minamino, J; Tech Digest of ISOM2001 2001, VPd-25
(12) Nagata, K; Jpn J Appl Phys 1999, V38, P1679 CAPLUS
(13) Narumi, K; Tech Digest of ISOM2001 2001, VFr-K-02
(14) Nishiuchi, K; Jpn J Appl Phys 1998, V37, P2163 CAPLUS
(15) Nishiuchi, K; Proc of 7th Symposium on Phase-Change Recording 1995, P79
(16) Satoh, I; E*PCOS 01 (First European Symposium on Phase Change Optical Storage) 2001
(17) Satoh, I; IEEE Trans on Magnetics 1998, V34, P337
(18) Satoh, I; Proc of SPIE 2000, V4085, P283
(19) Weijenbergh, P; Tech Digest of ISOM2001 2000, VTh-I-04
(20) Yamada, N; Tech Digest of ODS2001 2001, VMB1

L15 ANSWER 17 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:904454 CAPLUS
DN 138:9714
ED Entered STN: 29 Nov 2002
TI Optical recording medium and recording method

IN Harigaya, Makoto; Miura, Hiroshi; Okura, Hiroko; Mizutani, Miku; Hibino, Eiko; Yuzurihara, Hajime; Kageyama, Yoshiyuki; Abe, Mikiko; Deguchi, Hiroshi; Ito, Kazunori
PA Ricoh Company Ltd., Japan

SO Eur. Pat. Appl., 32 pp.
CODEN: EPXXDW

DT Patent
LA English
IC ICM G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 56
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1260973	A2	20021127	EP 2002-11189	20020521
	EP 1260973	A3	20030716		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2003305955	A2	20031028	JP 2002-113269	20020416
	US 2003012917	A1	20030116	US 2002-151324	20020520
	US 6770346	B2	20040803		
PRAI	JP 2001-151129	A	20010521		
	JP 2001-290036	A	20010921		
	JP 2002-35131	A	20020213		
	JP 2002-113269	A	20020416		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1260973	ICM	G11B007-24
EP 1260973	ECLA	G11B007/243
US 2003012917	NCL	428/064.400
	ECLA	G11B007/243

AB An optical recording medium is described comprising a recording layer contg. a phase-change recording material causing a reversible phase change between a cryst. phase and an amorphous phase by irradn. with an electromagnetic wave, wherein the phase change material mainly comprises materials expressed by the compn. formula X:Ge:Mn:Sb:Te (.alpha.:.beta.:.gamma.:.delta.:.epsilon.) with each of the components resp. fulfills .alpha. = 0-5, .beta. = 1-5, .gamma. = 1-10, .delta. = 65-80, .epsilon. = 15-25, and .alpha. .ltoreq. .gamma. (X = Ga, Sn; .alpha., .beta., .gamma., .delta., .epsilon. expresses at.%, and .alpha. + .beta. + .gamma. + .delta. + .epsilon. = 100). A method for recording to an optical recording medium is also described entailing a step for irradiating a multi-pulse light to form a recording mark having a prescribed length of which a recording time = nT (integer n >2, and T = ref. clock); characterized in that the multi-pulse light comprises a pulse train having; (a) a first heating and a cooling pulse; (b) an intermediate heating and a cooling pulse; and (c) a last heating and a cooling pulse; and when a heating pulse time is expressed as Opi and a cooling pulse time is expressed as Fpi such that a first heating pulse time and a head cooling pulse time of the pulse train are resp. expressed by OP1 and FP1, a last heating pulse time and a last cooling pulse time of the pulse train are resp. expressed by OPm and FPm, one or a plurality of an intermediate heating pulse time and an intermediate cooling pulse time of the pulse train are resp. expressed by OPj and FPj (j=2..., m-1); wherein the no. of pulse m is equal to L when the length of the prescribed recording mark n is 2L (integer L .gtoreq.2) or 2L + 1 (integer L .gtoreq.1); and the length of each pulse part OPi + FPi (i = 1,..., m) is substantially two times longer compared to the ref. clock T.

ST optical recording medium method

IT Optical recording
Optical recording materials
Phase change materials
(optical recording medium using phase change materials and recording method)

IT Alloys, uses
RL: DEV (Device component use); USES (Uses)
(recording media; optical recording medium using phase change materials and recording method)

IT 1309-48-4, Magnesium oxide (MgO), uses 13463-67-7, Titanium oxide (TiO2), uses
RL: DEV (Device component use); USES (Uses)
(optical recording medium using phase change materials and recording method)

IT 409-21-2, Silicon carbide (SiC), uses 1314-23-4, Zirconium oxide (ZrO2), uses 1314-36-9, Yttrium oxide (Y2O3), uses 1314-98-3, Zinc sulfide (ZnS), uses 7440-21-3, Silicon, uses 7631-86-9, Silica, uses 7704-34-9, Sulfur, uses
RL: DEV (Device component use); USES (Uses)
(protection layer; optical recording medium using phase change materials and recording method)

IT 476485-52-6 476485-53-7 476485-54-8 ***476485-55-9*** 476485-57-1 476485-60-6 476485-62-8 476485-65-1 476485-67-3 476485-69-5 476485-71-9 476485-73-1 476485-75-3 476485-77-5 476485-79-7 476485-81-1 476485-83-3 476485-85-5 476485-87-7 476485-89-9 476485-92-4 476485-94-6 476485-96-8 476485-98-0 476486-00-7
RL: DEV (Device component use); USES (Uses)
(recording layer; optical recording medium using phase change materials and recording method)

IT 7429-90-5D, Aluminum, alloy 7440-22-4, Silver, uses 476485-51-5
RL: DEV (Device component use); USES (Uses)
(reflection layer; optical recording medium using phase change materials and recording method)

L15 ANSWER 18 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:773766 CAPLUS
DN 137:302305

ED Entered STN: 11 Oct 2002
TI Erasable optical recording media with good resistance to repetitive recording and their manufacture
IN Yamada, Noboru; Kitaura, Hideki; Nishihara, Takashi; Kojima, Rie
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24
ICS G11B007-24; B41M005-26; G11B007-26
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2002298436	A2	20021011	JP 2001-92485	20010328
PRAI JP 2001-92485		20010328		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002298436	ICM	G11B007-24
	ICS	G11B007-24; B41M005-26; G11B007-26

AB The invention relates to laser-recording media having TeO-based protective layers on at least one side of a recording layer. Degrdn. and contamination of recording layers by protective layers are prevented with this invention. Phase diagrams for the protective layer compns. are given.
ST erasable optical recording medium protective layer; tellurium oxide protective layer optical disk
IT Erasable optical disks
(erasable optical disks having TeO-based protective layers with good resistance to repetitive recording)
IT 7429-90-5, Aluminum, uses 7429-91-6, Dysprosium, uses 7439-91-0, Lanthanum, uses 7439-95-4, Magnesium, uses 7439-96-5, Manganese, uses 7440-03-1, Niobium, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-22-4, Silver, uses 7440-24-6, Strontium, uses 7440-31-5, Tin, uses 7440-32-6, Titanium, uses 7440-36-0, Antimony, uses 7440-47-3, Chromium, uses 7440-50-8, Copper, uses 7440-53-1, Europium, uses 7440-54-2, Gadolinium, uses 7440-56-4, Germanium, uses 7440-57-5, Gold, uses 7440-60-0, Holmium, uses 7440-65-5, Yttrium, uses 7440-67-7, Zirconium, uses 7440-69-9, Bismuth, uses 13494-80-9, Tellurium, uses 39293-89-5, Tellurium oxide (Te2O3) 109657-84-3, Tellurium oxide (TeO1.2)
RL: TEM (Technical or engineered material use); USES (Uses)
(erasable optical disks having TeO-based protective layers with good resistance to repetitive recording)
IT 7439-88-5, Iridium, uses 7439-89-6, Iron, uses 7439-90-9, Krypton, uses 7439-92-1, Lead, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-04-2, Osmium, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-37-1, Argon, uses 7440-39-3, Barium, uses 7440-42-8, Boron, uses 7440-43-9, Cadmium, uses 7440-44-0, Carbon, uses 7440-48-4, Cobalt, uses 7440-55-3, Gallium, uses 7440-58-6, Hafnium, uses 7440-62-2, Vanadium, uses 7440-63-3, Xenon, uses 7440-70-2, Calcium, uses 7440-74-6, Indium, uses 7727-37-9, Nitrogen, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(protective layer contg.; erasable optical disks having TeO-based protective layers with good resistance to repetitive recording)
IT ***130328-95-9*** 132913-90-7
RL: TEM (Technical or engineered material use); USES (Uses)
(recording layer; erasable optical disks having TeO-based protective layers with good resistance to repetitive recording)

L15 ANSWER 19 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:767824 CAPLUS
DN 137:286550
ED Entered STN: 09 Oct 2002
TI Phase-changeable optical recording materials
IN Omachi, Noritake; Nakamura, Tadamasa; Ashida, Sumio; Yusu, Keiichiro; Suzuki, Katsumi
PA Toshiba Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM B41M005-26
ICS G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2002293032	A2	20021009	JP 2001-102049	20010330
PRAI JP 2001-102049		20010330		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002293032	ICM	B41M005-26
	ICS	G11B007-24

AB The material has a phase-changeable optical recording layer GeyMz(SbxTe1-x)1-y-z [M = Sn, Pb, or Sn and Pb; 0.60.ltoreq. x .ltoreq.0.85; 0< y + z .ltoreq.0.20; y .gtoreq.1/19z]. The material shows good thermal stability and erasing characteristics even when the recording layer is thin and shows high sensitivity.
ST optical recording antimony tellurium germanium tin lead
IT Optical recording materials
(phase-changeable optical recording material contg. antimony germanium tellurium and tin and/or lead)
IT ***466679-63-0*** ***466679-64-1*** ***466679-65-2***
466679-66-3 ***466679-67-4*** 466679-68-5 466679-69-6
466679-70-9 466679-71-0 466679-72-1 ***466679-74-3***
466679-75-4
RL: DEV (Device component use); USES (Uses)
(phase-changeable optical recording material contg. antimony germanium tellurium and tin and/or lead)

L15 ANSWER 20 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:714328 CAPLUS
DN 137:255433
ED Entered STN: 20 Sep 2002
TI Phase-change optical disk
IN Shinozuka, Michiaki
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24
ICS G11B007-24; B41M005-26; C03C003-32; C23C014-06
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2002269815	A2	20020920	JP 2001-74122	20010315
PRAI JP 2001-74122		20010315		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002269815	ICM	G11B007-24
	ICS	G11B007-24; B41M005-26; C03C003-32; C23C014-06

AB The invention relates to a phase-change optical disk capable of high d. recording, comprising a 1st recording layer, and a 2nd recording layer formed on the light-incident substrate, wherein the 1st recording layer is made of the chalcogenide glass contg. Sb and Te for improving the recording sensitivity.
ST optical disk phase change chalcogenide glass antimony tellurium
IT Optical disks
(phase-change optical disk)
IT Chalcogenide glasses
Polycarbonates, uses
RL: DEV (Device component use); USES (Uses)
(substrate; phase-change optical disk)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(protective layer; phase-change optical disk)
IT 52896-61-4 461463-57-0 461463-58-1 461463-59-2 ***461463-60-5***
461463-61-6 461463-62-7 461463-63-8 461463-64-9 461463-65-0
461463-66-1
RL: DEV (Device component use); USES (Uses)
(recording layer; phase-change optical disk)

L15 ANSWER 21 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:708688 CAPLUS
DN 137:255426
ED Entered STN: 18 Sep 2002
TI Phase-change optical random-access-memory medium
IN Shinozuka, Michiaki
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM B41M005-26
ICS G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 56
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2002264512	A2	20020918	JP 2001-66853	20010309
PRAI JP 2001-66853		20010309		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002264512	ICM	B41M005-26
	ICS	G11B007-24

AB The memory medium comprises, successively from the bottom, a lower substrate, a lower protective layer, a recording layer, a upper protective layer, a heat-release layer, a resin layer, a bonding layer, and a upper substrate; wherein the recording layer is made of a substance expressed by GeyAzBw(SbxTe1-x)1-w-y-z (A = Zn, Pb, Sn, Mg, Mn; B = Ag, In; x = 0.65-0.80, w = 0.01-0.15, y = 0.01-0.10, z = 0.01-0.10). The memory medium, using an alloy having a similar compn. to that of eutectic Sb-Te compn., shows high storage stability under high-temp. and high-humidity environment.
ST phase change optical RAM disk antimony tellurium alloy; germanium tellurium antimony alloy optical RAM disk
IT Erasable optical disks
(RAM, phase-change; phase-change optical RAM medium using Te-Sb-Ge based alloy as recording layer)
IT 460089-73-0 460089-75-2 460089-76-3 ***460089-77-4***
460089-78-5
RL: DEV (Device component use); USES (Uses)
(recording layer; phase-change optical RAM medium using Te-Sb-Ge based alloy as recording layer)

L15 ANSWER 22 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:414597 CAPLUS
DN 137:132009
ED Entered STN: 03 Jun 2002
TI Rewritable dual-layer phase-change optical disk with a balanced transmittance structure
AU Narumi, Kenji; Akiyama, Tetsuya; Miyagawa, Naoyasu; Nishihara, Takashi; Kitaura, Hideki; Kojima, Rie; Nishiuchi, Kenichi; Yamada, Noboru
CS Optical Disk Systems Development Center, Matsushita Electric Industrial Co., Ltd., Osaka, 570-8501, Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2002), 41(5A), 2925-2930
CODEN: JAPNDE
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other

Reprographic Processes)

AB A rewritable dual-layer phase-change optical disk with a balanced transmittance structure for the layer located at the laser beam incident side (Layer 0) was developed. In this disk structure, transmittance of Layer 0 is almost const., whether the layer is recorded or not. This structure was realized by adopting Ge-Sb-Te film that has appropriate optical consts., and optimizing the thickness of the dielec. layers. It is proved that this disk structure is effective in suppressing the influence of the recording state of Layer 0 on the layer beneath (Layer 1). Practical performances of the disk with this structure were confirmed for both layers. The feasibility of up to 55 GB capacity was examd. for this rewritable dual-layer phase-change optical disk.

ST rewritable dual layer phase change optical disk balanced transmittance; germanium antimony tellurium rewritable dual layer phase change disk

IT Erasable optical disks
(phase-change; rewritable dual-layer phase-change optical disk with balanced transmittance structure)

IT Optical transmission
(rewritable dual-layer phase-change optical disk with balanced transmittance structure)

IT Aluminum alloy, base
Silver alloy, base
RL: DEV (Device component use); USES (Uses)
(reflective layer; rewritable dual-layer phase-change optical disk with balanced transmittance structure)

IT 206255-08-5, Antimony germanium telluride(Sb2Ge8Te11) ***444310-97-8*** 444310-98-9
RL: PRP (Properties)
(comparison; dependence of optical transmission on film thickness in relation to rewritable dual-layer phase-change optical disk based on Sb-Ge-Te)

IT 1314-98-3, Zinc sulfide, properties 7631-86-9, Silica, properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(dielec. layer; rewritable dual-layer phase-change optical disk with balanced transmittance structure)

IT 51845-89-7, Germanium nitride
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(interface; rewritable dual-layer phase-change optical disk with balanced transmittance structure)

IT 87715-69-3 127860-51-9, Antimony germanium telluride
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(rewritable dual-layer phase-change optical disk with balanced transmittance structure)

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Akiyama, T; Jpn J Appl Phys 2001, V40, P1598 CAPLUS
(2) Bruneau, J; Jpn J Appl Phys 1998, V37, P2168 CAPLUS
(3) Furumiya, S; ITE Tech Rep [in Japanese] 1993, V17, P7
(4) Hayami, A; Jpn J Appl Phys 2000, V39, P871 CAPLUS
(5) Hayashi, K; Tech Dig ISOM 2001, Pd-33
(6) Kitaoka, Y; Tech Dig ISOM 2001, Fr-M-04
(7) Kurokawa, K; Tech Dig ODS 2001, P28
(8) Nagata, K; Jpn J Appl Phys 1999, V38, P1679 CAPLUS
(9) Nakamura, S; Tech Dig ISOM 1998, Tu-D-5
(10) Nishiuchi, K; Jpn J Appl Phys 1998, V37, P2163 CAPLUS
(11) Ohta, T; Proc SPIE 1986, V695, P2 CAPLUS
(12) Osato, K; Proc SPIE 1998, V3401, P80 CAPLUS
(13) Rubin, K; Proc SPIE 1994, V2338, P247
(14) Yamada, N; J Appl Phys 1991, V69, P2849 CAPLUS
(15) Yamada, N; to be published in Proc SPIE

L15 ANSWER 23 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:363459 CAPLUS

DN 137:26057

ED Entered STN: 16 May 2002

TI A novel approach to obtain GeSbTe-based high speed crystallizing materials for phase-change optical recording

AU Lee, Tae-Yon; Cheong, Byung-Ki; Lee, Taek Sung; Park, Sung Jin; Kim, Won Mok; Lee, Kyung Seok; Kim, Ki-Bum; Kim, Soon Gwang

CS School of Materials Science and Engineering, Seoul National University, Seoul, 151-742, S. Korea

SO Materials Research Society Symposium Proceedings (2001), 674(Applications

of Ferromagnetic and Optical Materials, Storage and Magnetoelectronics), V1.7.1-V1.7.6
CODEN: MRSPDH; ISSN: 0272-9172
PB Materials Research Society
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB A new approach is proposed to obtain fast crystg. materials based on a conventional GeSbTe alloy for rewritable phase change optical data storage. By means of co-sputtering, Ge1Sb2Te4 alloy was mixed with Sn1Bi2Te4 alloy so as to form pseudo-binary alloys (Ge1Sb2Te4)1.x(Sn1Bi2Te4)x (x is a mole fraction). From structural and optical analyses of the co-sputtered and annealed alloy films, the formation of stable cryst. single phases was obsd. along with a Vegard's law behavior, suggesting a homogeneous mixing of the two alloys. By use of a 4 layered disk with (Ge1Sb2Te4)0.85(Sn1Bi2Te4)0.15 recording layer, a preliminary test of writing and erasing was carried out and the results were compared with the case of the disk with Ge1Sb2Te4 recording layer. The (Ge1Sb2Te4)0.85(Sn1Bi2Te4)0.15 recording layer was found to yield markedly higher erasability, esp. with increasing disk linear velocity.
ST rewritable optical disk antimony bismuth germanium tellurium tin alloy; high speed crystg alloy phase change optical recording disk
IT Erasable optical disks
(cosputtering of bismuth tin telluride and antimony germanium telluride alloys for rewritable optical disks)
IT Band gap
Crystal structure
(cosputtering of bismuth tin telluride and antimony germanium telluride alloys for rewritable optical disks in relation to)
IT Optical recording materials
(phase-change; cosputtering of bismuth tin telluride and antimony germanium telluride alloys for rewritable optical disks)
IT 11127-06-3, Bismuth tin telluride (Bi2SnTe4) 16150-59-7, Antimony germanium telluride (Sb2GeTe4) ***434956-00-0***
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(cosputtering of bismuth tin telluride and antimony germanium telluride alloys for rewritable optical disks)
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Agaev, K; Kristallografiya 1966, V11(3), P400
(2) Anon; Handbook of Chemistry and Physics, 81st ed 2000, P9
(3) Anon; Handbook of Ternary Alloy Phase Diagrams 1997
(4) Jiang, F; Proceedings of International Sympositum on Optical Memory 1989, V28(Suppl 28-3), P293
(5) Kojima, R; Proceedings of the 12th Symposium on Phase Change Optical Information Storage 2000, P36
(6) Lee, C; J Appl Phys 2001, V89(6), P3290 CAPLUS
(7) Ohno, E; Jpn J Appl Phys 1989, V28(7), P1235 CAPLUS
(8) Trappe, C; Jpn J Appl Phys 2000, V39(2B), P766
(9) Yamada, N; Jpn J Appl Phys 1998, V37(4B), P2104 CAPLUS
(10) Zhou, G; Jpn J Appl Phys 1999, V38(3B), P1625 CAPLUS
(11) Zhukova, T; Kristallografiya 1971, V16(5), P796

L15 ANSWER 24 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:299460 CAPLUS
DN 137:208285
ED Entered STN: 22 Apr 2002
TI Advanced 4.7-GB DVD-RAM with a 4X data transfer rate
AU Furukawa, Shige-aki; Nishiuchi, Kenichi; Nagata, Kenichi; Kojima, Rie; Yamada, Noboru
CS Optical Disk Systems Development Center, Matsushita Electric Industrial Co., Ltd., Moriguchi, Osaka, 570-8501, Japan
SO Proceedings of SPIE-The International Society for Optical Engineering (2002), 4342(Optical Data Storage 2001), 154-159
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB The authors demonstrated the possibility of high data rate recording on a

DVD-RAM disk which utilizes Ge-Sb-Te phase-change materials. To ensure high transfer rate overwriting on the DVD, quadruple speed (44 Mbps) recording at a linear velocity of 16.4 m/s was tested using a Sn-added Ge-Sn-Sb-Te material as the recording layer. Double speed (22 Mbps) recording on the present 4.7 GB DVD-RAM at a linear velocity of 8.2 m/s was also tested. A CNR of more than 53 dB and an erasability of more than 30 dB were obtained at each double, triple and quadruple speeds. In addn., by recording via 8-16 random modulation signals, a jitter of 9% or less and a direct overwrite performance of 100,000 cycles were confirmed.

ST phase change optical disk DVD RAM; germanium tin antimony tellurium recording optical disk DVD RAM

IT Erasable optical disks
(DVD-RAM; high data rate recording on DVD-RAM disk using Ge-Sb-Te phase-change materials)

IT Polycarbonates, uses
RL: DEV (Device component use); USES (Uses)
(pre-grooved substrate; high data rate recording on DVD-RAM disk using Ge-Sb-Te phase-change materials)

IT Germanium alloy, base
Silver alloy, base
RL: DEV (Device component use); USES (Uses)
(high data rate recording on DVD-RAM disk using Ge-Sb-Te phase-change materials)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses 51845-89-7, Germanium nitride
RL: DEV (Device component use); USES (Uses)
(high data rate recording on DVD-RAM disk using Ge-Sb-Te phase-change materials)

IT ***452912-83-3***
RL: DEV (Device component use); USES (Uses)
(recording layer; high data rate recording on DVD-RAM disk using Ge-Sb-Te phase-change materials)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anon; Physical Specifications Version 2.0 1999
(2) Furumiya, S; Technical Digest of ISOM 2000
(3) Kitaura, H; Proc PCOS 1999, P89
(4) Kojima, R; Technical Digest of ISOM 2000
(5) Satoh, I; Proc ISOS Shanghai 2001, V4085, P283

L15 ANSWER 25 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:299449 CAPLUS

DN 137:208284

ED Entered STN: 22 Apr 2002

TI Phase-change material for use in rewritable dual-layer optical disk

AU Yamada, Noboru; Kojima, Rie; Uno, Mayumi; Akiyama, Tetsuya; Kitaura, Hideki; Narumi, Kenji; Nishiuchi, Kenichi

CS Optical Disk Systems Development Center, Matsushita Electric Industrial Co., Ltd., Japan

SO Proceedings of SPIE-The International Society for Optical Engineering (2002), 4342(Optical Data Storage 2001), 55-63
CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB A thin film of Sn-doped and GeTe-rich GeTe-Sb2Te3 shows characteristics that make it suitable for use in rewritable dual-layer optical disks employing a violet laser. By increasing the GeTe component form Ge2Sb2Te5 to Ge4Sb2Te7, and Ge8Sb2Te11, optical changes were increased. By substituting Sn for a proportion of Ge in these compns., crystn. rates are greatly increased and even a 5 nm-thick film showed a very short laser-crystn. time of less than 50 ns. The film was successfully applied to layer 0 of rewritable dual-layer disk: capacity of 27 GB and a 33 Mbps data transfer rate were confirmed for a disk using a conventional 0.6 mm substrate, and 45 GB capacity and the same data transfer rate were obtained for another disk using thin cover layer 0.1 mm thick (NA = 0.85).

ST rewritable optical disk phase change recording material; germanium antimony tellurium tin phase change optical disk

IT Activation energy
Crystallization temperature

Optical constants
Optical transmission
Thermal properties
(characteristics of Sn-doped and GeTe-rich GeTe-Sb2Te3 materials for rewritable dual-layer optical disk)
IT Metallic glasses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(characteristics of Sn-doped and GeTe-rich GeTe-Sb2Te3 materials for rewritable dual-layer optical disk)
IT Optical recording materials
(erasable, phase-change; characteristics of Sn-doped and GeTe-rich GeTe-Sb2Te3 materials for rewritable dual-layer optical disk)
IT Telluride glasses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(germanium-antimony-telluride; characteristics of Sn-doped and GeTe-rich GeTe-Sb2Te3 materials for rewritable dual-layer optical disk)
IT Erasable optical disks
(phase-change; rewritable dual-layer disk contg. Sn-doped and GeTe-rich GeTe-Sb2Te3)
IT 7440-31-5, Tin, properties
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(characteristics of Sn-doped and GeTe-rich GeTe-Sb2Te3 materials for rewritable dual-layer optical disk)
IT 16150-49-5, Antimony germanium telluride(Sb2Ge2Te5) 389866-62-0
389866-63-1 ***389866-64-2*** 452916-31-3 452916-32-4
452916-33-5
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(characteristics of Sn-doped and GeTe-rich GeTe-Sb2Te3 materials for rewritable dual-layer optical disk)
IT 7440-36-0, Antimony, properties 7440-56-4, Germanium, properties
13494-80-9, Tellurium, properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(germanium-antimony-telluride; characteristics of Sn-doped and GeTe-rich GeTe-Sb2Te3 materials for rewritable dual-layer optical disk)
RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Akiyama, T; Tech Dig ISOM 2000, VWe-C-01, P16
(2) Furukawa, S; Digest of ODS 2001
(3) Furumiya, S; Digest of ODS 2001
(4) Hayami, A; Tech Dig MORIS 2000
(5) Kojima, R; Technical Digest of ISOM 2000
(6) Nagata, K; Jpn J Appl Phys 1999, V38, P1679 CAPLUS
(7) Osato, K; Proc Optical Data Storage 1998, V3401, P80 CAPLUS
(8) Satoh, I; Proc 5th Int Symp On Optical Storage ISOS 2000, V4085, P283
(9) Yamada, N; J Appl Phys 2000, V88(12), P7020 CAPLUS

L15 ANSWER 26 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:183867 CAPLUS
DN 136:239160
ED Entered STN: 15 Mar 2002
TI Manufacture of reversible phase change optical recording disk comprising two recording layers

IN Nishihara, Takashi; Kojima, Rie; Yamada, Noboru
PA Matsushita Electric Industrial Co., Ltd., Japan

SO Eur. Pat. Appl., 31 pp.
CODEN: EPXXDW

DT Patent
LA English
IC ICM G11B007-24
ICS G11B007-26; G11B007-0045
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1187119	A2	20020313	EP 2001-307419	20010831
	EP 1187119	A3	20041201		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002144736	A2	20020522	JP 2001-253401	20010823
	US 2002054983	A1	20020509	US 2001-943327	20010829

	US 6670014	B2	20031230		
	CN 1347082	A	20020501	CN 2001-135703	20010831
	US 2004033442	A1	20040219	US 2003-637952	20030808
	US 6890613	B2	20050510		
	US 2004048029	A1	20040311	US 2003-637819	20030808
	US 2004047281	A1	20040311	US 2003-637842	20030808
	US 2004048030	A1	20040311	US 2003-637919	20030808
	US 6743496	B2	20040601		
	US 2004058117	A1	20040325	US 2003-667684	20030922
	US 6794006	B2	20040921		
PRAI	JP 2000-263414	A	20000831		
	US 2001-943327	A1	20010829		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1187119	ICM	G11B007-24
	ICS	G11B007-26; G11B007-0045
EP 1187119	ECLA	G11B007/0045; G11B007/125C; G11B007/125C1; G11B007/24; G11B007/243; G11B007/26
US 2002054983	NCL	428/212.000
	ECLA	G11B007/0045; G11B007/125C; G11B007/125C1; G11B007/24; G11B007/243; G11B007/26
US 2004033442	NCL	430/270.130
	ECLA	G11B007/0045; G11B007/125C; G11B007/125C1; G11B007/24; G11B007/243; G11B007/26
US 2004048029	NCL	428/064.100
	ECLA	G11B007/0045; G11B007/125C; G11B007/125C1; G11B007/24; G11B007/243; G11B007/26
US 2004047281	NCL	369/283.000
	ECLA	G11B007/0045; G11B007/125C; G11B007/125C1; G11B007/24; G11B007/243; G11B007/26
US 2004048030	NCL	428/064.100
	ECLA	G11B007/0045; G11B007/125C; G11B007/125C1; G11B007/24; G11B007/243; G11B007/26
US 2004058117	NCL	428/064.200
	ECLA	G11B007/0045; G11B007/125C; G11B007/125C1; G11B007/24; G11B007/243; G11B007/26

AB An information recording medium includes a first information layer and a second information layer. The first information layer includes a first recording layer in which a reversible phase change is caused between a cryst. phase and an amorphous phase by irradn. of a laser beam or application of current. The second information layer includes a second recording layer in which a reversible phase change is caused between a cryst. phase and an amorphous phase by the irradn. of the laser beam or the application of the current. The first recording layer is made of a first material, the second recording layer is made of a second material, and the first material is different from the second material. The object of the present invention is to provide an information recording medium with two recording layers having good recording and erasing performance.

ST phase change optical recording erasable disk

IT Erasable optical disks
(manuf. of reversible phase change optical recording disk comprising two recording layers)

IT 51845-89-7, Germanium nitride
RL: DEV (Device component use); USES (Uses)
(manuf. of reversible phase change optical recording disk comprising two recording layers)

IT 124307-66-0
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(manuf. of reversible phase change optical recording disk comprising two recording layers)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(protective layer; manuf. of reversible phase change optical recording disk comprising two recording layers)

IT ***403729-87-3*** 403729-88-4
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(recording layer; manuf. of reversible phase change optical recording disk comprising two recording layers)

L15 ANSWER 27 OF 44 CAPLUS

AN 2002:47643 CAPLUS

DN 136:126623
ED Entered STN: 18 Jan 2002
TI Rewritable information recording medium, method for producing the same, and recording/reproducing method using the same
IN Kojima, Rie; Nishihara, Takashi; Yamada, Noboru
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Eur. Pat. Appl., 32 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 56, 73

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1172811	A2	20020116	EP 2001-306008	20010712
	EP 1172811	A3	20041201		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2003016687	A2	20030117	JP 2001-209132	20010710
	TW 575873	B	20040211	TW 2001-90116831	20010710
	US 2002024913	A1	20020228	US 2001-903285	20010711
	US 6751184	B2	20040615		
	CN 1345053	A	20020417	CN 2001-132834	20010713
PRAI	JP 2000-212338	A	20000713		
	JP 2001-128904	A	20010426		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1172811	ICM	G11B007-24
EP 1172811	ECLA	G11B007/24; G11B007/243; G11B007/257; G11B007/26
US 2002024913	NCL	369/094.000
	ECLA	G11B007/24; G11B007/243; G11B007/257; G11B007/26

AB The invention relates to a recording medium for optically recording, erasing, rewriting and reproducing information. The medium of the invention includes a 1st substrate, a 2nd substrate disposed so as to be opposed to the 1st substrate, a 1st information layer disposed between the 1st substrate and the 2nd substrate , a 2nd information layer disposed between the 1st information layer and the 2nd substrate, and an intermediate layer disposed between the 1st information layer and the 2nd information layer. The 1st information layer includes a 1st recording layer that is transformed in phase reversibly between a crystal phase and an amorphous phase with a laser beam, and the 2nd information layer includes a 2nd recording layer that is transformed in phase reversibly between a crystal phase and an amorphous phase. The 1st recording layer contains, Ge, Sn, Sb, and Te, and has a thickness of 9 nm or less. The transmittance Tc(%) of the first information layer in a case where the first recording layer is in a crystal phase, and a transmittance Ta(%) of the first information layer in a case where the first recording layer is in an amorphous phase satisfy 40.ltoreq.(Tc+Ta)/2 with respect to a laser beam having a wavelength in a range of 390-430 nm.

ST information recording reproducing antimony germanium tellurium tin alloy

IT Optical recording materials
(optical recording materials contg. antimony, germanium, tellurium and tin alloy with reversible phase-change recording)

IT 1309-48-4, Magnesium oxide (MgO), uses 1314-13-2, Zinc oxide (ZnO), uses 1314-23-4, Zirconium oxide (ZrO2), uses 1314-61-0, Tantalum oxide (Ta2O5) 1344-28-1, Aluminum oxide (Al2O3), uses 7446-07-3, Tellurium oxide (TeO2) 10101-52-7 13463-67-7, Titanium oxide (TiO2), uses 24304-00-5, Aluminum nitride (AlN) 113151-72-7, Aluminum titanium nitride 157392-07-9, Silicon sulfur zinc oxide 389867-20-3, Tellurium zinc oxide
RL: TEM (Technical or engineered material use); USES (Uses)
(optical information recording medium with reversible phase layer and dielec. layer of)

IT 389866-62-0 ***389866-63-1*** ***389866-64-2***
389866-65-3 ***389866-66-4*** ***389866-67-5***
389866-68-6 ***389866-69-7*** ***389866-70-0***
389866-71-1 ***389866-72-2*** ***389866-73-3***
389866-74-4 ***389866-75-5*** ***389866-76-6***

389866-77-7 ***389866-78-8*** ***389866-79-9***
389866-80-2 ***389866-81-3*** ***389866-82-4***
389866-83-5 , Antimony 4.08, germanium 34.9, tellurium 51, tin 10 (atomic) ***389866-84-6*** , Antimony 5.05, germanium 34.4, tellurium 50.5, tin 10 (atomic) ***389866-85-7*** , Antimony 6, germanium 34, tellurium 50, tin 10 (atomic) ***389866-86-8*** , Antimony 6.93, germanium 33.6, tellurium 49.5, tin 10 (atomic) ***389866-87-9*** , Antimony 7.84, germanium 33.1, tellurium 49, tin 10 (atomic)
389866-88-0 , Antimony 8.74, germanium 32.7, tellurium 48.5, tin 10 (atomic) ***389866-89-1*** , Antimony 9.6, germanium 32.3, tellurium 48.08, tin 10 (atomic) ***389866-90-4*** , Antimony 5.05, germanium 29.4, tellurium 50.5, tin 15 (atomic) ***389866-91-5*** , Antimony 6, germanium 29, tellurium 50, tin 15 (atomic) ***389866-92-6*** , Antimony 6.93, germanium 28.6, tellurium 49.5, tin 15 (atomic)
389866-93-7 , Antimony 7.84, germanium 28.1, tellurium 49, tin 15 (atomic) ***389866-94-8*** , Antimony 8.74, germanium 27.7, tellurium 48.5, tin 15 (atomic) ***389866-95-9*** , Antimony 9.6, germanium 27.3, tellurium 48.08, tin 15 (atomic) ***389866-96-0*** , Antimony 4.08, germanium 24.9, tellurium 51, tin 20 (atomic) ***389866-97-1*** , Antimony 5.05, germanium 24.4, tellurium 50.5, tin 20 (atomic)
389866-98-2 , Antimony 6, germanium 24, tellurium 50, tin 20 (atomic) ***389866-99-3*** , Antimony 6.93, germanium 23.6, tellurium 49.5, tin 20 (atomic) ***389867-00-9*** , Antimony 7.84, germanium 23.1, tellurium 49, tin 20 (atomic) ***389867-01-0*** , Antimony 8.74, germanium 22.7, tellurium 48.5, tin 20 (atomic) ***389867-02-1*** , Antimony 9.6, germanium 22.3, tellurium 48.08, tin 20 (atomic)
389867-03-2 , Antimony 4.08, germanium 19.9, tellurium 51, tin 25 (atomic) ***389867-04-3*** , Antimony 5.05, germanium 19.9, tellurium 50.5, tin 25 (atomic) ***389867-05-4*** , Antimony 6, germanium 19, tellurium 50, tin 25 (atomic) ***389867-06-5*** , Antimony 6.93, germanium 18.6, tellurium 49.5, tin 25 (atomic) ***389867-07-6*** , Antimony 7.84, germanium 18.1, tellurium 49, tin 25 (atomic)
389867-08-7 , Antimony 8.74, germanium 17.7, tellurium 48.5, tin 25 (atomic) ***389867-09-8*** , Antimony 9.6, germanium 17.3, tellurium 48.08, tin 25 (atomic) ***389867-10-1*** , Antimony 4.08, germanium 14.9, tellurium 51, tin 30 (atomic) ***389867-11-2*** , Antimony 5.05, germanium 14.4, tellurium 50.5, tin 30 (atomic) ***389867-12-3*** , Antimony 6, germanium 14, tellurium 50, tin 30 (atomic)
389867-13-4 , Antimony 6.93, germanium 13.6, tellurium 49.5, tin 30 (atomic) ***389867-14-5*** , Antimony 7.84, germanium 13.1, tellurium 49, tin 30 (atomic) ***389867-15-6*** , Antimony 8.74, germanium 12.7, tellurium 48.5, tin 30 (atomic) ***389867-17-8*** , Antimony 9.6, germanium 12.3, tellurium 48.08, tin 30 (atomic) ***389867-18-9*** , Antimony 21.4, germanium 18.6, tellurium 50, tin 10 (atomic)
389867-19-0 , Antimony 21.4, germanium 13.6, tellurium 50, tin 15 (atomic)
RL: TEM (Technical or engineered material use); USES (Uses)
(optical recording medium with first recording layer contg. reversible-phase material)

IT 7439-90-9, Krypton, uses 7440-37-1, Argon, uses 7727-37-9, Nitrogen, uses 7782-44-7, Oxygen, uses
RL: NUU (Other use, unclassified); USES (Uses)
(prodn. of optical information recording medium using sputtering gas contg.)

L15 ANSWER 28 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:789865 CAPLUS
DN 136:142494
ED Entered STN: 31 Oct 2001
TI Acceleration of crystallization speed by Sn addition to Ge-Sb-Te phase-change recording material
AU Kojima, Rie; Yamada, Noboru
CS Optical Disk Systems Development Center, Matsushita Electric Industrial Co., Ltd., Osaka, 570-8501, Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2001), 40(10), 5930-5937
CODEN: JAPNDE
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB It is shown that a quaternary Ge-Sn-Sb-Te phase-change recording material obtained by adding Sn to Ge-Sb-Te has a higher crystn. speed than Ge-Sb-Te, and gives a larger erase ratio than Ge-Sb-Te when film thickness is decreased. Static evaluations have shown that a 6-nm-thick quaternary material was crystd. by laser irradn. of 50 ns. Measurements carried out under the conditions of a wavelength of 405 nm, a linear speed of 8.6 m/s and a mark length of 0.294 .mu.m showed that the erase ratio of over 30 dB was obtained with the new compn. for a 6-nm-thick layer. A carrier-to-noise ratio (CNR) exceeding 50 dB was also obtained. It was concluded that these effects of Sn addn. which give rise to complete crystn. are brought about by abundant nucleation in the amorphous phase even in thin layers. It was confirmed by X-ray diffraction analyses that the new Ge-Sn-Sb-Te material has a single-phase-NaCl-type structure, like the conventional compns. of Ge-Sb-Te.

ST antimony germanium tin telluride phase change optical recording disk; crystn speed acceleration antimony germanium telluride recording material disk

IT Crystallization
Optical disks
X-ray diffractometry
(acceleration of crystn. speed by tin addn. to Ge-Sb-Te phase-change recording material)

IT Telluride glasses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(acceleration of crystn. speed by tin addn. to Ge-Sb-Te phase-change recording material)

IT Optical recording materials
(phase-change; acceleration of crystn. speed by tin addn. to Ge-Sb-Te phase-change recording material)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses 51845-89-7, Germanium nitride
RL: DEV (Device component use); USES (Uses)
(acceleration of crystn. speed by tin addn. to Ge-Sb-Te phase-change recording material)

IT 7440-31-5, Tin, uses
RL: MOA (Modifier or additive use); USES (Uses)
(acceleration of crystn. speed by tin addn. to Ge-Sb-Te phase-change recording material)

IT ***389866-63-1*** ***389866-65-3***
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(acceleration of crystn. speed by tin addn. to Ge-Sb-Te phase-change recording material)

IT 12040-02-7, Tin telluride
RL: PRP (Properties)
(acceleration of crystn. speed by tin addn. to Ge-Sb-Te phase-change recording material in relation to)

IT 117958-28-8, Antimony germanium telluride (Sb2Ge4Te7) ***389866-64-2***
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(recording layer; acceleration of crystn. speed by tin addn. to Ge-Sb-Te phase-change recording material)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Akiyama, T; Jpn J Appl Phys 2001, V40, P1598 CAPLUS
(2) Kitaura, H; Proc Phase Change Optical Information Storage 1999, P89
(3) Nagata, K; Jpn J Appl Phys 1999, V38, P1679 CAPLUS
(4) Nakamura, S; Jpn J Appl Phys 1998, V37, PL1020 CAPLUS
(5) Nishiuchi, K; Jpn J Appl Phys 1998, V37, P2163 CAPLUS
(6) Nonaka, T; Thin Solid Films 2000, V370, P258 CAPLUS
(7) Sarrach, D; J Non-Cryst Solids 1976, V22, P245 CAPLUS
(8) Uno, M; Proc Phase Change Optical Information Storage 1999, P83
(9) Yamada, N; J Appl Phys 1991, V69, P2849 CAPLUS
(10) Yamada, N; J Appl Phys 2000, V88, P7020 CAPLUS
(11) Yamada, N; Jpn J Appl Phys 1998, V37, P2104 CAPLUS
(12) Yamada, N; Trans Mater Res Soc Jpn B 1993, V15, P1035
(13) Yamane, M; Hajimete Garasu wo Tukuru Hito no Tameni (For a Person Making Glass for the First Time), Chap 12 1999

L15 ANSWER 29 OF 44 CAPLUS
AN 2001:517537 CAPLUS

DN 135:96176
ED Entered STN: 18 Jul 2001
TI Pb-free Sn-based solder having good wettability, thermal cycle property, and oxidation resistance
IN Yamada, Seiji; Waide, Noboru; Sato, Tadashi
PA Topy Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM B23K035-26
ICS C22C013-00; C22C013-02
CC 56-9 (Nonferrous Metals and Alloys)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2001191196	A2	20010717	JP 2000-328272	20001027
PRAI JP 1999-308213	A	19991029		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2001191196	ICM	B23K035-26
	ICS	C22C013-00; C22C013-02

AB The Sn-based solder comprises Cu, Sb, and Te and/or P. Preferably, the solder contains Cu 0.1-1.5, Sb 0.01-1.0, and Te 0.001-0.1 and/or P 0.0001-0.1 wt.%. Optionally, the solder contains 0.002-0.5 wt.% Ge and 0.005-0.1 wt.% Ni.
ST tin copper antimony tellurium phosphorus solder
IT Solders
(Pb-free Sn-based solder having good wettability, thermal cycle property, and oxidn. resistance)
IT 189396-23-4 339266-60-3 349543-81-3 349543-82-4 349543-83-5
349543-84-6
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Pb-free Sn-based solder having good wettability, thermal cycle property, and oxidn. resistance)

L15 ANSWER 30 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:319612 CAPLUS
DN 134:334326
ED Entered STN: 04 May 2001
TI Optical recording medium and optical recording apparatus
IN Nakakuki, Hideo; Arai, Takeshi; Nonaka, Toshihisa
PA Toray Industries, Inc., Japan
SO Eur. Pat. Appl., 18 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 1096485	A2	20010502	EP 2000-309494	20001027
EP 1096485	A3	20011128		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002074739	A2	20020315	JP 2000-322230	20001023
CN 1296260	A	20010523	CN 2000-133743	20001027
PRAI JP 1999-308635	A	19991029		
JP 2000-178062	A	20000614		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1096485	ICM	G11B007-24
EP 1096485	ECLA	G11B007/006; G11B007/24; G11B007/243

AB The invention relates to an optical recording medium and an optical recording app. that allow information to be recorded, erased and reproduced by irradn. with a laser beam and to a rewritable phase change

type optical recording medium that allows information signals to be recorded at high speeds and high densities. A phase change type optical recording medium has at least a 1st dielec. layer, a 1st boundary layer, a recording layer, a 2nd boundary layer, an absorption correction layer and a reflection layer in this order on a substrate. The recording layer has a specific compn. [{(Ge1-kSnk)0.5Te0/5}x(Sb0.4Te0.6)1-x]1-ySbyAz where A is an element of any of the groups 3-14 of the 3rd-6th period of the periodic table, excluding Ga, Sb and Te; and x, y,z and k are in ranges resp. represented by formulas (1) or (2): 0.5 .ltoreq. x .ltoreq. 0.95; 0 .ltoreq. y .ltoreq. 0.08; 0 .ltoreq. z .ltoreq. 0.2; k = 0 0.5 .ltoreq. x .ltoreq. 0.95 0.01 .ltoreq. y .ltoreq. 0.08; z = 0; 0 .ltoreq. k .ltoreq. 0.5 The 1st and 2nd boundary layers are resp. mainly composed of .gtoreq.1 of C, carbides, oxides and nitrides, and the absorption correction layer has a refractive index of 1.0 to 4.0 and an attenuation coeff. of 0.5 to 3.0.

ST optical recording app antimony germanium tin telluride

IT Sputtering
(of zinc sulfide and silica targets, for recording layer for optical recording medium)

IT Optical recording materials
(optical recording medium contg. tellurium alloy recording layer)

IT Polycarbonates, reactions
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(substrate, for recording layer for optical recording medium)

IT 336177-22-1P, Aluminum oxide (AlO0.41)
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(optical recording medium contg.)

IT 336177-34-5P, Chromium nitride (CrN0.74)
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(optical recording medium contg. absorption correction layer of)

IT 336177-28-7P, Chromium germanium nitride (Cr0.25GeN1.2) 336177-37-8P, Germanium nitride (GeN0.8) 336177-39-0P, Chromium germanium nitride (Cr0.25GeN0.8) 336177-41-4P, Chromium germanium nitride (Cr0.2GeN1.2) 336177-46-9P, Chromium germanium nitride (Cr0.4GeN1.2)
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(optical recording medium contg. boundary layer of)

IT 142240-40-2P, Aluminum 97.5, chromium 2.5 (atomic)
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(optical recording medium contg. reflection layer of)

IT 336177-18-5P, Germanium nitride (GeN1.2)
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(optical recording medium contg. secondary boundary layer of)

IT 336176-97-7P, Antimony 17.8, germanium 28.6, tellurium 53.6 (atomic)
336177-00-5P, Antimony 18.8, germanium 28.8, tellurium 52.4 (atomic)
336177-03-8P , Antimony 17.1, germanium 22.2, tellurium 53.3, tin 7.4 (atomic) 336177-06-1P, Antimony 12, germanium 36, tellurium 52 (atomic) 336177-12-9P, Antimony 14, germanium 35, tellurium 51 (atomic) 336177-15-2P, Antimony 10.6, germanium 36.3, tellurium 52.1 (atomic)
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(optical recording medium contg.recording layer of)

IT 336177-09-4P, Antimony 16.9, germanium 28.3, tellurium 53.8 (atomic)
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(recording layer for optical recording medium contg.)

IT 1314-98-3, Zinc sulfide, reactions 7440-44-0, Carbon, reactions 7631-86-9, Silica, reactions 336177-32-3 336177-44-7 336177-48-1
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(sputtering of, for recording layer for optical recording medium)

L15 ANSWER 31 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2001:319611 CAPLUS

DN 134:334325

ED Entered STN: 04 May 2001

TI Optical multilayer disk, multiwavelength light source, and optical system

using them
IN Mizuuchi, Kiminori; Yamamoto, Kazuhisa; Kojima, Rie; Yamada, Noboru
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Eur. Pat. Appl., 44 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM G11B007-24
ICS G11B007-0045; G11B007-005; G11B007-125
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1096484	A2	20010502	EP 2000-309359	20001024
	EP 1096484	A3	20041222		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001194695	A2	20010719	JP 2000-268336	20000905
	JP 2001195777	A2	20010719	JP 2000-268877	20000905
	TW 498324	B	20020811	TW 2000-89122284	20001024
PRAI	JP 1999-302675	A	19991025		
	JP 1999-302676	A	19991025		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1096484	ICM	G11B007-24
	ICS	G11B007-0045; G11B007-005; G11B007-125
EP 1096484	ECLA	G02B006/126; G02F001/377Q; G11B007/0045P; G11B007/005; G11B007/12H1; G11B007/24

AB Optical information recording media which are recorded and reproduced by laser beams from one side, comprising .gtoreq.2 recording layers formed of a phase change material on a substrate, wherein the recording layers include a first recording layer with a first medium which is reproduced/recorded using laser light at wavelength .lambda.1 (nm) and a second recording layer with a second recording medium which is reproduced/recorded using laser light at wavelength .lambda.2 (nm) (counted from the side on which the laser beams are incident) are described in which the recording/reproducing light satisfies the relation 10 .ltoreq. |.lambda.1-.lambda.2| .ltoreq. 120, the ratio of the absorption of the first recording layer in a crystal state to the absorption of the first recording layer in an amorphous state is in a predetd. range, the transmittance of the first recording medium with the first recording layer being in the crystal state for .lambda.2 is .gtoreq.30, and the transmittance of the first recording medium with the first recording layer being in the amorphous state for .lambda.2 is .gtoreq.30. Methods for recording and reproducing information entailing the use of the media are also described. Optical waveguide devices are also described which comprise a substrate; a plurality of optical waveguides formed in the vicinity of a surface of the substrate; injection parts formed at one end of the optical waveguides; and emission parts formed on the other end of the optical waveguides, wherein the plurality of optical waveguides satisfy phase matching conditions different from one another, and the emission parts of the plurality of optical waveguides are provided at substantially the same position. Multiwavelength light sources and optical systems provided with a plurality of light sources and optical waveguide devices, including optical waveguide devices incorporating frequency converting means are also described.
ST optical multilayer recording media; waveguide device multiwavelength light source
IT Light sources
(multiwavelength; optical multilayer recording media and waveguide devices and multiwavelength light sources and optical systems using them)
IT Optical disks
Optical memory devices
Optical recording
Optical waveguides
(optical multilayer recording media and waveguide devices and multiwavelength light sources and optical systems using them)
IT Silver alloy, base

RL: DEV (Device component use); USES (Uses)
(optical multilayer recording media and waveguide devices and multiwavelength light sources and optical systems using them)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses 12064-98-1, Germanium nitride (GeN) 87715-69-3 ***336884-30-1***
RL: DEV (Device component use); USES (Uses)
(optical multilayer recording media and waveguide devices and multiwavelength light sources and optical systems using them)

L15 ANSWER 32 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:302132 CAPLUS
DN 135:99757
ED Entered STN: 29 Apr 2001
TI Rewritable dual-layer phase-change optical disk utilizing a blue-violet laser
AU Akiyama, Tetsuya; Uno, Mayumi; Kitaura, Hideki; Narumi, Kenji; Kojima, Rie; Nishiuchi, Kenichi; Yamada, Noboru
CS Optical Disk Systems Development Center, Matsushita Electric Industrial Co., Ltd., Osaka, 570-8501, Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2001), 40(3B), 1598-1603
CODEN: JAPNDE; ISSN: 0021-4922
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
AB The authors demonstrated for the 1st time the feasibility of using a rewritable dual-layer phase-change optical disk using a blue-violet laser. For the 1st medium, the authors adopted a very thin recording layer with a new phase-change material Ge-Sn-Sb-Te, and a 10-nm-thick Ag-alloy reflective layer to obtain a large transmittance and high-quality signals. For the 2nd medium, the authors optimized the thickness of each layer to obtain both a large optical absorption of the recording layer and a small heat capacity. Carrier-to-noise ratios of >50 dB, erasability of >30 dB and recording powers of 8 mW for the 1st medium and 11 mW for the 2nd medium were obtained under typical recording conditions corresponding to a capacity of 27 GB per 1 side of a 120 mm disk and a user data transfer rate of 33 Mbps.
ST disk optical rewritable blue violet laser silver alloy reflector; germanium tin antimonide telluride optical disk rewritable visible laser; zinc sulfide optical disk rewritable visible laser; silica optical disk rewritable visible laser; nitride germanium optical disk rewritable visible laser
IT Erasable optical disks
Optical reflection
Optical reflectors
Optical transmission
Semiconductor lasers
Visible lasers
(rewritable dual-layer phase-change optical disk utilizing blue-violet laser and silver alloy reflector)
IT Silver alloy, base
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(rewritable dual-layer phase-change optical disk utilizing blue-violet laser and silver alloy reflector)
IT 1314-98-3, Zinc monosulfide, properties 7631-86-9, Silica, properties 12064-98-1, Germanium nitride gen 87715-69-3 ***336884-30-1***
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(rewritable dual-layer phase-change optical disk utilizing blue-violet laser and silver alloy reflector)
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; DVD Specifications for Rewritable Disk (DVD-RAM) Part 1 Physical Specifications Version 2.0 1999
(2) Furumiya, S; ITE Tech Rep [in Japanese] 1993, V17, P7
(3) Kishi, T; Ext Abstr 56th Autumn Meet 1995, 29p-Za-5
(4) Kojima, R; Tech Dig ISOM2000 2000, We-C-06
(5) Miyagawa, N; Jpn J Appl Phys 1993, V32, P5324 CAPLUS
(6) Nagahama, S; Jpn J Appl Phys 2000, V39, PL647 CAPLUS
(7) Nagata, K; Jpn J Appl Phys 1999, V38, P1679 CAPLUS

(8) Nishiuchi, K; Ext Abstr 56th Autumn Meet 1995, 29p-Za-6
(9) Nishiuchi, K; Jpn J Appl Phys 1998, V37, P2163 CAPLUS
(10) Ohno, E; Jpn J Appl Phys 1991, V30, P677 CAPLUS
(11) Ohno, E; Tech Dig ISOM'94 1994, Tu A3
(12) Rubin, K; Proc SPIE 1994, V2338, P247
(13) Terao, M; Proc SPIE 1986, V695, P105 CAPLUS
(14) Uno, M; Proc 11th Symp on Phase Change Optical information Storage 1999, P83
(15) Yamada, N; J Appl Phys 1991, V69, P2849 CAPLUS
(16) Yamada, N; Proc SPIE 1998, V3401, P24 CAPLUS

L15 ANSWER 33 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:861073 CAPLUS
DN 134:19953
ED Entered STN: 08 Dec 2000
TI Grain-oriented Si-steel sheet for electromagnetic cores having low loss at increased flux density
IN Kurosaki, Yousuke; Fujikura, Masahiro
PA Nippon Steel Corp., Japan
SO Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C21D008-12
ICS H01F001-147
CC 55-11 (Ferrous Metals and Alloys)
Section cross-reference(s): 77
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1057898	A2	20001206	EP 2000-111033	20000531
	EP 1057898	A3	20041201		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2000345305	A2	20001212	JP 1999-152341	19990531
	JP 2000345306	A2	20001212	JP 1999-152342	19990531
	US 6565674	B1	20030520	US 2000-580888	20000530
	US 2003183304	A1	20031002	US 2003-402682	20030328
PRAI	JP 1999-152341	A	19990531		
	JP 1999-152342	A	19990531		
	US 2000-580888	A3	20000530		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1057898	ICM	C21D008-12
	ICS	H01F001-147
EP 1057898	ECLA	C21D008/12F4; C21D008/12L; H01F001/147S1
US 6565674	NCL	148/308.000; 148/111.000; 420/117.000
	ECLA	C21D008/12F4; C21D008/12L; H01F001/147S1
US 2003183304	NCL	148/111.000
	ECLA	C21D008/12F4; C21D008/12L; H01F001/147S1

AB The Si steel for low-loss electromagnetic cores contains C .ltoreq.0.005, Si 2.0-7.0, Mn .ltoreq.0.2, S and/or Se at .ltoreq.0.005% total, and optionally Al .ltoreq.0.065, N .ltoreq.0.005, and Sb, Sn, Cu, Mo, Ge, B, Te, As, Cr, and/or Bi at 0.003-0.3% each. The Si-steel ingot slab is hot rolled, and the intermediate strip is coiled, annealed, cooled, and cold rolled to the final sheet thickness, followed by the functional annealing, coating, and domain texturing. The grain-oriented Si-steel sheets are typically processed by laser-beam scribing to have the av. magnetic domain width .ltoreq.0.30 mm, and the magnetic domains .gtoreq.0.4 mm wide present only at 3-20% by area of the total. The typical sheet 0.22 mm thick having the high-flux electromagnetic loss of 1.13-1.32 W/kg at 1.9 G and 50 Hz was manufd. from the finished steel contg. C 0.002, Si 3.20, Mn 0.068, S 0.001, sol. Al 0.011, N 0.0010, Sn 0.15, and Cu 0.07%, vs. the high-flux core loss of 1.49-1.52 W/kg with decreased grain orientation after cold rolling and annealing.
ST silicon steel sheet electromagnetic core loss; laser scribed silicon steel domain electromagnetic core
IT Electromagnetic cores
(Si-steel sheets for; Si steel for textured electromagnetic cores having low loss at increased flux d.)
IT Magnetic flux

(core; Si steel for textured electromagnetic cores having low loss at increased flux)
IT Magnetic loss
(core; Si steel for textured electromagnetic cores having low loss at increased flux d.)
IT Magnetic domain
(laser-scribed; Si steel for textured electromagnetic cores having low loss at increased flux)
IT 7439-98-7, Molybdenum, uses 7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-38-2, Arsenic, uses 7440-42-8, Boron, uses 7440-47-3, Chromium, uses 7440-50-8, Copper, uses 7440-56-4, Germanium, uses 7440-69-9, Bismuth, uses 13494-80-9, Tellurium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(for electromagnetic cores; Si steel for textured electromagnetic cores having low loss at increased flux d.)
IT 11100-68-8, Silicon steel, uses 129284-59-9 239449-40-2
309964-85-0 309964-86-1 309964-87-2 309964-88-3
RL: TEM (Technical or engineered material use); USES (Uses)
(for electromagnetic cores; Si steel for textured electromagnetic cores having low loss at increased flux d.)

L15 ANSWER 34 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:666673 CAPLUS
DN 133:259400
ED Entered STN: 22 Sep 2000
TI Optical information recording medium and method for manufacturing thereof
IN Yamada, Noboru; Kojima, Rie; Matsunaga, Toshiyuki; Kawahara, Katsumi
PA Matsushita Electric Industrial Co., Ltd., Japan
SO PCT Int. Appl., 61 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM B41M005-26
ICS G11B007-24; G11B007-26; G11B009-04
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 75
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000054982	A1	20000921	WO 2000-JP1489	20000310
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2368171	AA	20000921	CA 2000-2368171	20000310
	AU 2000029427	A5	20001004	AU 2000-29427	20000310
	TW 466480	B	20011201	TW 2000-89104351	20000310
	EP 1170147	A1	20020109	EP 2000-908019	20000310
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	EP 1547796	A1	20050629	EP 2005-7262	20000310
	R: DE, FR, GB				
	US 6858277	B1	20050222	US 2001-936601	20011213
	US 2005058941	A1	20050317	US 2004-948832	20040922
	US 2005119123	A1	20050602	US 2005-30038	20050104
PRAI	JP 1999-68146	A	19990315		
	JP 1999-293292	A	19991015		
	EP 2000-908019	A3	20000310		
	WO 2000-JP1489	W	20000310		
	US 2001-936601	A1	20011213		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000054982	ICM	B41M005-26
	ICS	G11B007-24; G11B007-26; G11B009-04
WO 2000054982	ECLA	G03G005/02; G11B007/243; G11B007/26; G11B009/00;

		G11B009/08; G11B011/00; G11B011/08; G11B011/12; G11B013/00
EP 1170147	ECLA	G03G005/02; G11B007/243; G11B007/26; G11B009/00; G11B009/08; G11B011/00; G11B011/08; G11B011/12; G11B013/00
EP 1547796	ECLA	G11B007/26
US 6858277	NCL	428/064.100; 428/064.200; 428/064.500; 430/270.130
	ECLA	G03G005/02; G11B007/243; G11B007/26; G11B009/00; G11B009/08; G11B011/00; G11B011/08; G11B011/12; G11B013/00
US 2005058941	NCL	430/270.110
	ECLA	G03G005/02; G11B007/243; G11B007/26; G11B009/00; G11B009/08; G11B011/00; G11B011/08; G11B011/12; G11B013/00
US 2005119123	NCL	503/201.000

AB An optical information recording medium has a recording material layer on a substrate where reversible phase transition between elec. or optically detectable states can be caused by elec. energy or electromagnetic energy. The recording material forming the recording layer is either a material having a crystal structure including lattice defects in one phase of the reversible phase transition or a material having a complex phase composed of a crystal portion including a lattice defect in one phase of the reversible phase transition and an metallic glasses portion. Both portions contain a common element. A part of the lattice defects are filled with an element other than the element constituting the crystal structure. The recording medium having a recording thin film exhibits little variation of the recording and reprodn. characteristics even after repetition of recording and reprodn. excellent weatherability, strong resistance against compn. variation, and easily controllable characteristics.

ST optical information recording medium crystal structure

IT Optical recording materials
(erasable; optical information recording medium and method for manufg. thereof)

IT 7429-90-5D, Aluminum, alloy with Ge, Sb, Te, uses 7439-92-1D, Lead, alloy with Ge, Sb, Te, uses 7439-96-5D, Manganese, alloy with Ge, Sb, Te, uses 7440-22-4D, Silver, alloy with Ge, Sb, Te, uses 7440-31-5D, Tin, alloy with Ge, Sb, Te, uses 7440-47-3D, Chromium, alloy with Ge, Sb, Te, uses 7440-69-9D, Bismuth, alloy with Ge, Sb, Te, uses
RL: ANT (Analyte); MOA (Modifier or additive use); ANST (Analytical study); USES (Uses)
(recording layer in optical information recording medium)

IT 16150-49-5, Antimony germanium telluride (Sb2Ge2Te5) 16150-59-7, Antimony germanium telluride (Sb2GeTe4) 117958-28-8, Antimony germanium telluride (Sb2Ge4Te7) 206255-10-9, Antimony germanium telluride (Sb2Ge9Te12) 295802-11-8, Aluminum antimony germanium telluride (Al0.2Sb2Ge2Te5) 295802-12-9, Aluminum antimony germanium telluride (Al0.5Sb2Ge2Te5) 295802-13-0, Aluminum antimony germanium telluride (AlSb2Ge2Te5) 295802-14-1, Aluminum antimony germanium telluride (Al1.5Sb2Ge2Te5) 295802-15-2, Aluminum antimony germanium telluride (Al2Sb2Ge2Te5) 295802-16-3, Aluminum antimony germanium telluride (Al2.5Sb2Ge2Te5) 295802-17-4, Aluminum antimony germanium telluride (Al3Sb2Ge2Te5) 295802-18-5, Antimony germanium telluride (Sb1.98Ge0.1Te3.07) 295802-20-9, Antimony germanium telluride (Sb1.96Ge0.2Te3.14) 295802-21-0, Antimony germanium telluride (Sb1.34Ge0.33Te2.34) 295802-23-2, Antimony germanium telluride (Sb0.66Ge0.67Te1.66) 295802-26-5, Antimony germanium telluride (Sb0.18Ge0.91Te1.18) 295802-27-6, Aluminum germanium tin telluride (Al2Ge3Sn5Te6) 295802-28-7, Aluminum germanium tin telluride (Al2Ge3Sn8.5Te6) 295802-29-8, Aluminum germanium lead telluride (Al2Ge3Pb5Te6) 295802-30-1, Aluminum germanium lead telluride (Al2Ge3Pb8.5Te6) 295802-31-2, Aluminum germanium silver telluride (Al2Ge3Ag5Te6) 295802-32-3, Aluminum germanium silver telluride (Al2Ge3Ag8.5Te6) 295802-33-4, Aluminum germanium telluride (Al0.67Ge0.67Te1.67) 295802-35-6, Aluminum germanium telluride (Al0.4Ge0.8Te1.4) 295802-36-7, Antimony germanium tin telluride (Sb2(Ge,Sn)4Te7) 295802-38-9 295802-39-0 295802-40-3 295802-41-4 295802-42-5 295802-43-6 295802-44-7 295802-46-9 295802-47-0 295802-48-1, Antimony germanium silver tin telluride (Sb1.98(Ge,Sn)3.96Ag0.01Te6.93) 295802-49-2, Antimony germanium silver tin telluride (Sb1.96(Ge,Sn)3.92Ag0.02Te6.86) 295802-50-5, Antimony germanium silver tin telluride (Sb1.94(Ge,Sn)3.88Ag0.03Te6.79)

295802-51-6, Antimony germanium silver tin telluride (Sb1.92(Ge,Sn)3.84Ag0.04Te6.72) 295802-52-7, Antimony germanium silver tin telluride (Sb1.9(Ge,Sn)3.8Ag0.05Te6.65) 295802-53-8, Antimony germanium silver tin telluride (Sb1.84(Ge,Sn)3.68Ag0.08Te6.44) 295802-55-0, Antimony germanium silver tin telluride (Sb1.8(Ge,Sn)3.6Ag0.1Te6.3) 295802-56-1, Antimony germanium silver tin telluride (Sb1.7(Ge,Sn)3.4Ag0.15Te5.95) 295802-57-2, Antimony germanium silver tin telluride (Sb1.6(Ge,Sn)3.2Ag0.2Te5.6) ***295802-58-3*** 295802-59-4, Antimony germanium telluride (Sb2.5Ge3Te6) 295802-61-8, Bismuth germanium telluride (Bi2.8Ge3Te6) 295802-63-0, Antimony bismuth germanium telluride (Sb2.5Bi2GeTe7) 295802-64-1, Bismuth germanium tin telluride (Bi2.7Ge3SnTe7) 295802-65-2, Antimony chromium germanium telluride (Sb2Cr0.3Ge2Te5) 295802-66-3, Antimony germanium indium telluride (Sb2GeIn0.2Te4) 295802-68-5, Bismuth germanium lead telluride (Bi2GePb0.1Te4) 295802-69-6, Antimony germanium selenide telluride (Sb2.2GeSe0.1Te3.9) 295802-70-9, Antimony germanium tin telluride (Sb3Ge3.5Sn0.01Te7) 295802-72-1, Antimony germanium tin telluride (Sb3.5Ge3.5Sn0.1Te7) 295802-73-2, Antimony germanium tin telluride (Sb3Ge3.5Sn0.5Te7) 295802-74-3, Antimony germanium tin telluride (Sb3.5Ge3.5Sn0.5Te7) 295802-75-4, Antimony germanium tin telluride (Sb4Ge3.5Sn0.5Te7) 295802-77-6, Antimony germanium tin telluride (Sb0.5Ge3.5Sn0.5Te7) 295802-78-7, Antimony germanium tin telluride (Sb4.5Ge3.5Sn0.5Te7) 295802-79-8
RL: TEM (Technical or engineered material use); USES (Uses)
(recording layer in optical information recording medium)
RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; JP 516528 A
(2) Asahi Kasei Kogyo K K; CA 1236693 A
(3) Asahi Kasei Kogyo K K; EP 195532 A
(4) Asahi Kasei Kogyo K K; DE 3671122 G
(5) Asahi Kasei Kogyo K K; JP 61258787 A CAPLUS
(6) Asahi Kasei Kogyo K K; AU 8654074 A
(7) Asahi Kasei Kogyo K K; US 4670345 A 1987
(8) Fuji Xerox Co Ltd; JP 02255378 A CAPLUS
(9) Fuji Xerox Co Ltd; DE 69023786 E
(10) Fuji Xerox Co Ltd; EP 387898 A 1990
(11) Fuji Xerox Co Ltd; US 5254832 A 1993
(12) Hisankabutsu Glass Kenkyu Kaihatsu K K; JP 376684 A 1991
(13) Hisankabutsu Glass Kenkyu Kaihatsu K K; JP 05229258 A 1993 CAPLUS
(14) Hisankabutsu Glass Kenkyu Kaihatsu K K; JP 06171234 A 1994 CAPLUS
(15) Matsushita Electric Ind Co Ltd; JP 1158962 A
(16) Matsushita Electric Ind Co Ltd; CN 1209624 A CAPLUS
(17) Matsushita Electric Ind Co Ltd; KR 99023184 A
(18) Matsushita Electric Ind Co Ltd; EP 898273 A2 1999 CAPLUS
(19) Nec Corporation; JP 469282 A 1992
(20) Nippon Telegr & Teleph Corp <Ntt>; JP 01277338 A 1989 CAPLUS
(21) Teijin Ltd; JP 10324063 A CAPLUS
(22) Teijin Ltd; CA 2232225 A CAPLUS
(23) Teijin Ltd; KR 98081741 A
(24) Teijin Ltd; EP 874361 A 1998 CAPLUS
(25) Toray Industries Inc; JP 342276 A 1991

L15 ANSWER 35 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:771010 CAPLUS
DN 132:14352
ED Entered STN: 07 Dec 1999
TI Grain-oriented silicon steel sheets with low magnetic hysteresis loss and their manufacture
IN Muraki, Mineo; Okabe, Seiji; Yamaguchi, Hiroshi
PA Kawasaki Steel Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C22C038-00
ICS C21D008-12; C21D009-46; C22C038-04; C22C038-60; H01F001-16
CC 55-11 (Ferrous Metals and Alloys)
Section cross-reference(s): 77
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI JP 11335794 A2 19991207 JP 1998-144231 19980526
JP 3386717 B2 20030317
JP 2003113453 A2 20030418 JP 2002-200069 19980526
PRAI JP 1998-144231 A3 19980526
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 11335794	ICM	C22C038-00
	ICS	C21D008-12; C21D009-46; C22C038-04; C22C038-60; H01F001-16

AB The Si steel sheets contain 1.5-7.0 wt.% of Si and have (110) plane which is generated by second recrystn. and is inclined at 2-8.degree. to the steel surface. The steel sheets are free from forsterite coatings and have av. surface roughness Ra .ltoreq.0.4 .mu.m, and magnetic hysteresis loss Wh1.7 .ltoreq.0.35 W/kg at 1.7T, and total contents of carbides, sulfides, and selenides are suppressed to .ltoreq.35 ppm [calcd. as (C + S + Se)]. The steel sheets are manufd. by (1) heating steel slabs contg. Si 1.5-7.0; Mn 0.02-0.2; Al .ltoreq.0.06; N .ltoreq.0.01; Se and/or S 0.01-0.06; B, Bi, Sb, Mo, Te, Sn, P, Ge, As, Nb, Ni, Cr, Ti, Cu, Pb, Zn and/or In 0.0005-2.0 wt.% (at .ltoreq.1280.degree.), (2) hot rolling, (3) optionally annealing, if necessary, (4) cold or hot rolling with optional intermediate annealing to give final thickness, (5) annealing for first recrystn., (6) applying annealing separators, and (7) annealing for second crystn. After the first recrystn. annealing, the steel sheet may be treated to increase the N content. In the method, the annealing separators contain 0.1-10 wt. parts of chlorides and/or fluorides of Tl or Pb. The oriented steel sheets have improved core loss.

ST silicon steel magnetic hysteresis loss low; grain oriented silicon steel magnetic core

IT Annealing
Magnetic cores
Magnetic hysteresis
Magnetic loss
Recrystallization
(manuf. of grain-oriented silicon steel sheets with low magnetic hysteresis loss)

IT 7758-95-4, Lead chloride 7783-46-2, Lead fluoride 39377-61-2, Thallium chloride
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(annealing separators; manuf. of grain-oriented silicon steel sheets with low magnetic hysteresis loss)

IT 138131-58-5 152185-04-1, processes ***251447-61-7*** 251447-62-8 251447-63-9 251449-22-6
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manuf. of grain-oriented silicon steel sheets with low magnetic hysteresis loss)

L15 ANSWER 36 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:556623 CAPLUS
DN 131:207018
ED Entered STN: 02 Sep 1999
TI Optical recording media containing alloy-based layer
IN Harigatani, Makoto; Kinoshita, Mikio; Deguchi, Hiroshi
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM B41M005-26
ICS C22C012-00; G11B007-24
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 56
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11235873	A2	19990831	JP 1998-57520	19980223

PRAI JP 1998-57520 19980223
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES

JP 11235873	ICM	B41M005-26
	ICS	C22C012-00; G11B007-24

AB The media consist of a recording layer contg. a Zn-, Sn-, Sb-, and Te-based alloy. The media are useful for recording, reading, and erasing information by changing optical const. by irradiating laser beam, etc. The media show high sensitivity.

ST optical recording material alloy layer; zinc tin antimony tellurium alloy optical recording

IT Optical recording materials
(rewritable optical recording media contg. Zn-, Sn-, Sb-, and Te-based alloy)

IT 241478-10-4 241478-11-5 241478-12-6 ***241478-13-7*** 241478-14-8 241478-15-9 241478-16-0 241478-17-1 241478-18-2 241478-19-3
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(rewritable optical recording media contg. Zn-, Sn-, Sb-, and Te-based alloy)

L15 ANSWER 37 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:114310 CAPLUS
DN 130:199350
ED Entered STN: 19 Feb 1999
TI Directional electromagnetic steel sheets having ultralow magnetic loss and their preparation
IN Takamiya, Toshihito; Komatsubara, Michio; Senda, Kunihiro
PA Kawasaki Steel Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C22C038-00
ICS C21D008-12; C22C038-60; H01F001-16
CC 55-11 (Ferrous Metals and Alloys)
Section cross-reference(s): 77

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11043746	A2	19990216	JP 1997-200032	19970725
	JP 3357578	B2	20021216		
PRAI	JP 1997-200032		19970725		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 11043746	ICM	C22C038-00
	ICS	C21D008-12; C22C038-60; H01F001-16
JP 11043746	ECLA	H01F001/147S1

AB The steel sheets contain Si 1.5-7.0, Ni 0.01-1.5, Sb 0.01-0.15, B 0-0.0050, C .ltoreq.0.003, S and/or Se .ltoreq.0.003, N .ltoreq.0.003, Al .ltoreq.0.002, Ti .ltoreq.0.003, P .ltoreq.0.30, and auxiliary inhibitor components selected from Mn, Cu, Sn, Ge, Bi, V, Nb, Cr, Te, and Mo 0.005-2.5 (as total) wt.% (Sb% >0.01, Ni% >0.01, 0.3 - 7.5Sb% < Ni% < 1 - 10Sb%). The steel sheets have crystal orientation .ltoreq.4.degree. angle (as av.) deviated from (110)[001] direction, .ltoreq.7.degree. av. difference in crystal orientation angle (of grains having .gtoreq.8 mm diam. aligned in a direction rectangular to the rolling direction), and av. crystal grain size .ltoreq.25 mm, and .gtoreq.75 area% of the steels is occupied by crystal grains of diam. .gtoreq.8 mm. The steel sheets are manufd. from slabs of steels contg. C 0.035-0.100, Si 1.5-7.0, Mn 0.02-0.20, S and/or Se 0.005-0.04, Al 0.010-0.04, N 0.0010-0.0150, Sb 0.01-0.15, Ni 0.01-1.5, B 0-0.050, and .gtoreq.1 selected from Cu, Sn, Ge, Bi, V, Nb, Cr, Te, and Mo 0.005-2.5 (as total) wt.% (Sb% >0.01, Ni% >0.01, 0.3 - 7.5Sb% < Ni% < 1 - 10Sb%) by heating at .gtoreq.1300.degree., hot rolling, annealing, cold rolling for once or for .gtoreq.2 times including intermediate annealing, decarburizing annealing for first recrystn., applying separators, and second recrystn. annealing and purifn. annealing; wherein the second recrystn. annealing is carried out by heating by av. heating rate .ltoreq.25.degree./h from 500.degree. to 900.degree.. By adding Ni and Sb to the steels, first and second recrystd. textures and crystal orientation are improved, and the steel sheets show ultralow magnetic loss due to their high crystal orientation and small second

recrystd. grain size.
ST directional electromagnetic steel sheet manuf; crystal orientation directional electromagnetic steel manuf
IT Magnetic flux
Magnetic loss
(prepn. of directional electromagnetic steel sheets having ultralow magnetic loss)
IT Crystal orientation
(uniform; prepn. of directional electromagnetic steel sheets having ultralow magnetic loss)
IT 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-03-1, Niobium, uses 7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-47-3, Chromium, uses 7440-50-8, Copper, uses 7440-56-4, Germanium, uses 7440-62-2, Vanadium, uses 7440-69-9, Bismuth, uses 13494-80-9, Tellurium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(microalloy; prepn. of directional electromagnetic steel sheets having ultralow magnetic loss)
IT 39460-57-6, processes 215936-37-1 220739-68-4 220739-71-9 220739-73-1 220739-75-3 220739-77-5 220739-79-7 220739-81-1 220739-84-4 220739-86-6 220739-88-8 220739-90-2 220739-92-4 220739-94-6 220739-96-8
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(prepn. of directional electromagnetic steel sheets having ultralow magnetic loss)
IT ***220739-99-1*** ***220740-02-3***
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(prepn. of directional electromagnetic steel sheets having ultralow magnetic loss)

L15 ANSWER 38 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1998:816479 CAPLUS
DN 130:131835
ED Entered STN: 01 Jan 1999
TI Phase-change optical recording medium and its manufacture
IN Suzuki, Masaru; Ohyama, Akihiko
PA Asahi Chemical Industry Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM B41M005-26
ICS C22C012-00; G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 56
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 10337955	A2	19981222	JP 1997-149458	19970606
PRAI JP 1997-149458		19970606		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 10337955	ICM	B41M005-26
	ICS	C22C012-00; G11B007-24

AB The medium has a recording layer composed of (SbxTeyGez)100-wTawRv (x = 5-60, y = 35-65, z = 5-65, 0 < w .ltoreq. 20, v = 0-10, x + y + z = 100; R = Ag, Au, Pb, Sn, Hf, Nb, V, Pd, and/or Pt). The manuf. of the medium involves sputtering of a sintered target from a powd. Sb-Te-Ge alloy and a powd. Ta(-R alloy) to form a recording layer. The medium shows improved reliability of mark-edge recording.
ST phase change optical recording disk; antimony tellurium germanium tantalum optical recording; sputtering alloy recording layer optical disk
IT Optical disks
Sputtering
(manuf. of phase-change optical recording medium involving sputtering process for Sb-Te-Ge-Ta-based alloy recording layer)
IT 219774-28-4, Antimony 24.7, germanium 19.7, tantalum 1.3, tellurium 54.3 (atomic) 219774-29-5, Antimony 23.7, germanium 19, tantalum 5.2,

tellurium 52.1 (atomic) 219774-30-8, Antimony 21.4, germanium 17.1, tantalum 14.6, tellurium 47 (atomic) 219774-31-9, Antimony 19, germanium 19, tantalum 5, tellurium 57 (atomic) 219774-32-0, Antimony 23.8, germanium 23.8, tantalum 5, tellurium 47.5 (atomic) 219774-33-1, Antimony 28.5, germanium 28.5, tantalum 5, tellurium 38 (atomic) 219774-34-2, Antimony 42.8, germanium 47.5, tantalum 5, tellurium 47.5 (atomic) 219774-35-3, Antimony 38, germanium 9.5, tantalum 5, tellurium 47.5 (atomic) 219774-36-4, Antimony 28.5, germanium 19, tantalum 5, tellurium 47.5 (atomic) 219774-37-5, Antimony 7.12, germanium 40.4, tantalum 5, tellurium 47.5 (atomic) 219774-38-6, Antimony 14.2, germanium 33.2, tantalum 5, tellurium 47.5 (atomic) 219774-39-7, Antimony 23.25, germanium 18.6, silver 2, tantalum 5, tellurium 51.15 (atomic) 219774-40-0, Antimony 23.25, germanium 18.6, gold 2, tantalum 5, tellurium 51.15 (atomic) 219774-41-1, Antimony 23.25, germanium 18.6, lead 2, tantalum 5, tellurium 51.15 (atomic) ***219774-42-2*** , Antimony 23.25, germanium 18.6, tantalum 5, tellurium 51.15, tin 2 (atomic) 219774-43-3, Antimony 23.25, germanium 18.6, hafnium 2, tantalum 5, tellurium 51.15 (atomic) 219774-44-4, Antimony 23.25, germanium 18.6, niobium 2, tantalum 5, tellurium 51.15 (atomic) 219774-45-5, Antimony 23.25, germanium 18.6, tantalum 5, tellurium 51.15, vanadium 2 (atomic) 219774-46-6, Antimony 23.25, germanium 18.6, palladium 2, tantalum 5, tellurium 51.15 (atomic) 219774-47-7, Antimony 23.25, germanium 18.6, platinum 2, tantalum 5, tellurium 51.15 (atomic)
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(manuf. of phase-change optical recording medium involving sputtering process for Sb-Te-Ge-Ta-based alloy recording layer)

L15 ANSWER 39 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1998:338022 CAPLUS
DN 129:18677
ED Entered STN: 05 Jun 1998
TI Lead-tin solder alloy and solder paste
IN Ahn, Hyung Kee; Hahn, Jae Ho; Kim, In Chul
PA Samsung Electronics Co., Ltd., S. Korea
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM B23K035-26
CC 56-9 (Nonferrous Metals and Alloys)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10137971	A2	19980526	JP 1997-303185	19971105
	JP 3199674	B2	20010820		
	KR 200638	B1	19990615	KR 1996-52163	19961105
	KR 230269	B1	19991115	KR 1996-80101	19961231
	US 6033488	A	20000307	US 1997-961021	19971030
	GB 2319039	A1	19980513	GB 1997-23049	19971031
	GB 2319039	B2	20000412		
PRAI	KR 1996-52163	A	19961105		
	KR 1996-80101	A	19961231		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 10137971	ICM	B23K035-26
US 6033488	NCL	148/024.000; 420/559.000
	ECLA	B23K035/26B; C22C013/02
GB 2319039	ECLA	B23K035/26B; C22C013/02

AB A solder alloy contains Sn 50-80, Sb 0.05-10, Ag 0.0001-5, P 0.00001-0.5%, and Pb as the balance. Optional components are Cu 0.01-1, Bi 0.01-5, Ni 0.01-5, Ge 0.001-0.5, Te 0.001-1, Ga 0.001-1, and In 0.001-1%. A solder paste contains the solder alloy and rosin.
ST lead tin solder alloy paste
IT Solders
(lead-tin solder alloy and solder paste)
IT Rosin
RL: TEM (Technical or engineered material use); USES (Uses)
(lead-tin solder alloy and solder paste contg.)
IT Soldering
(paste; lead-tin solder alloy and solder paste)

IT 207683-96-3 ***207683-97-4*** 207683-98-5 ***207683-99-6***
RL: TEM (Technical or engineered material use); USES (Uses)
(lead-tin solder alloy and solder paste contg.)
IT 82061-99-2 173480-03-0 207684-03-5 207684-04-6 207684-05-7
207684-06-8 207684-07-9
RL: TEM (Technical or engineered material use); USES (Uses)
(microalloyed with phosphorus and germanium; lead-tin solder alloy and solder paste contg.)
IT 148845-66-3 207684-01-3 207684-02-4
RL: TEM (Technical or engineered material use); USES (Uses)
(microalloyed with phosphorus; lead-tin solder alloy and solder paste contg.)
IT 64159-98-4 207684-00-2
RL: TEM (Technical or engineered material use); USES (Uses)
(microalloyed with silver and phosphorus; lead-tin solder alloy and solder paste contg.)

L15 ANSWER 40 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1996:609437 CAPLUS
DN 125:227668
ED Entered STN: 12 Oct 1996
TI Manufacture of low-iron loss unidirectional electromagnetic steel plate for iron cores of transformers
IN Sato, Hiroaki; Kurosaki, Yosuke
PA Shinnippon Seitetsu KK, Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C21D008-12
ICS C22C038-00; C22C038-60
CC 55-11 (Ferrous Metals and Alloys)
Section cross-reference(s): 77
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 08176665	A2	19960709	JP 1994-324453	19941227
PRAI JP 1994-324453		19941227		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 08176665	ICM	C21D008-12
	ICS	C22C038-00; C22C038-60

AB In manuf. of the title steel plate involving soaking a continuously cast slab contg. C 0.015-0.100, Si 2.0-4.0, Mn 0.03-0.12, sol. Al 0.010-0.065, N 0.0040-0.0100, and S and/or Se 0.005-0.050 in total, and further Sb, Sn, Cu, Mo, Ge, B, Te, As, and/or Bi 0.003-0.3 wt.%, and balance Fe at 1320-1450.degree., hot-rolling the slab, annealing, cold-rolling in several passes, again annealing for decarburization and primary recrystn., and final finish annealing, the heating at .gtoreq.1200.degree. is carried out at .gtoreq.5.degree./min heating rate, and the steel plate is kept at 180-350.degree. for .gtoreq.1 min at least once between a pass during the cold rolling process. Crystal grain growth is suppressed by controlling the heating rate, and iron loss can be lowered by controlling the aging temp. and aging time between passes in the cold-rolling.
ST electromagnetic steel iron loss transformer; rolling unidirectional electromagnetism steel plate
IT Recrystallization
(in manuf. of unidirectional electromagnetic steel plate for iron core of transformer)
IT Magnetic cores
Magnetic induction and Magnetization
Magnetic loss
(manuf. of unidirectional electromagnetic steel plate by controlled rolling and annealing for iron core of transformer)
IT Metalworking
(rolling, in manuf. of unidirectional electromagnetic steel plate for iron core of transformer)
IT 85368-03-2 86121-43-9 ***181809-48-3***
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manuf. of unidirectional electromagnetic steel plate by controlled

rolling and annealing for iron core of transformer)
IT 7439-98-7, Molybdenum, uses 7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-38-2, Arsenic, uses 7440-42-8, Boron, uses 7440-50-8, Copper, uses 7440-56-4, Germanium, uses 7440-69-9, Bismuth, uses 7704-34-9, Sulfur, uses 7782-49-2, Selenium, uses 13494-80-9, Tellurium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(microalloying element; manuf. of unidirectional electromagnetic steel plate by controlled rolling and annealing for iron core of transformer)

L15 ANSWER 41 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1995:860261 CAPLUS
DN 124:34803
ED Entered STN: 17 Oct 1995
TI Laser-induced crystallization phenomena in GeTe-based alloys. II. Composition dependence of nucleation and growth
AU Coombs, J. H.; Jongenelis, A. P. J. M.; van Es-Spiekman, W.; Jacobs, B. A. J.
CS Philips Res. Lab., Eindhoven, 5656 AA, Neth.
SO Journal of Applied Physics (1995), 78(8), 4918-28
CODEN: JAPIAU; ISSN: 0021-8979
PB American Institute of Physics
DT Journal
LA English
CC 56-8 (Nonferrous Metals and Alloys)
AB The laser-induced crystn. behavior of GeTe-based amorphous alloys has been measured with a novel multipulse laser technique. This enables the compn. dependence of the nucleation rate and crystal growth speed to be independently followed. Two types of crystn. are investigated. The first involves single-phase crystn. of quaternary alloys based on Ge39Sb9Te52, in which the compn. dependence of nucleation and growth is followed as Se, S, Sn, and Si are included. Both the nucleation rate and crystal-growth speed vary exponentially with the compn., and a correlation is found between crystn. behavior and bond strengths. The second involves multiphase crystn. in the GeSbTe ternary system. It is shown that the obsd. variations in crystn. behavior primarily arise from the compn. dependence of nucleation rather than crystal growth. The implications of this finding for the importance of long range diffusion during crystn. in the GeSbTe system are discussed.
ST germanium antimony tellurium alloy laser crystn; selenium germanium tellurium alloy laser crystn; sulfur germanium tellurium alloy laser crystn; silicon germanium tellurium alloy laser crystn; tin germanium tellurium alloy laser crystn
IT Crystal nucleation
Laser radiation
(compn. dependence of nucleation and growth in laser-induced crystn. of GeTe-based alloys)
IT Recording materials
(optical, compn. dependence of nucleation and growth in laser-induced crystn. of GeTe-based alloys)
IT 171670-75-0 172019-00-0 172019-01-1 172019-02-2 ***172019-03-3*** 172019-04-4 172019-05-5 172019-06-6
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(compn. dependence of nucleation and growth in laser-induced crystn. of GeTe-based alloys)

L15 ANSWER 42 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1990:601490 CAPLUS
DN 113:201490
ED Entered STN: 23 Nov 1990
TI Optical information recording media
IN Kimura, Kunio; Ono, Eiji
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM B41M005-26
ICS G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 02147289	A2	19900606	JP 1988-301176	19881129
PRAI JP 1988-301176		19881129		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 02147289	ICM	B41M005-26
	ICS	G11B007-24

AB The title media contain compns. consisting of Te, Ge, Sn and Sb, in which the relative at.% of Te, Ge and Sn is represented, in a triangular compn. diagram for these 3 components, as points within an area defined by lines connecting points for Te:Ge:Sn (at.%) 93:5:2, 93:2:5, 68:2:30, 52:18:30, and 52:46:2, and at.% of Sb in the compn. is 5-40. Alternately, the points defining the area may be 92:5:3, 92:3:5, 68:3:29, 74:23:3, and Sb at.% is 10-35. Alternately, the points defining the area may be 68:3:29, 70:10:20, 68:29:3, 52:45:3, and 52:19:29, and Sb at.% is 5-25. These media permit wider choice of conditions for writing and erasing, and provide reproducible performance. Recording and reading can be done with semiconductor lasers. Thus, a polycarbonate disk was deposited with a ZnS layer, with a layer of (Te80Ge10Sn10)70Sb30, and with a ZnS layer, and used for recording and erasing using 7 and 13 mW power, resp. Carrier-to-noise ratio of the recording was 55 dB, and erasing ratio was 53 dB.

ST optical recording media alloy; tellurium alloy optical recording media; germanium alloy optical recording media; tin alloy optical recording media; antimony alloy optical recording media

IT Recording materials
(optical, alloy compns. for)

IT ***130328-86-8*** ***130328-87-9*** ***130328-88-0***
130328-89-1 ***130328-90-4*** ***130328-91-5***
130328-92-6 ***130328-93-7*** ***130328-94-8***
130328-95-9 ***130328-96-0*** ***130328-97-1***
130328-98-2 ***130328-99-3*** ***130329-00-9***
130329-01-0 ***130329-02-1*** ***130329-03-2***
130329-04-3 ***130329-05-4*** ***130329-06-5***
130329-07-6 ***130329-08-7*** ***130329-09-8***
130329-10-1 ***130329-11-2*** ***130329-12-3***
130329-13-4 ***130329-14-5*** ***130329-15-6***
130329-16-7 ***130329-17-8*** ***130329-18-9***
130329-19-0 ***130329-20-3*** ***130329-21-4***
130329-22-5 ***130329-23-6***

RL: USES (Uses)
(optical recording media having layer of)

L15 ANSWER 43 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1987:224596 CAPLUS
DN 106:224596
ED Entered STN: 26 Jun 1987
TI Information recording materials
IN Morimoto, Isao; Itagaki, Kazumi; Mori, Koichi
PA Asahi Chemical Industry Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM B41M005-26
ICS G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 61258787	A2	19861117	JP 1985-100875	19850513
JP 07025200	B4	19950322		
PRAI JP 1985-100875		19850513		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 61258787	ICM	B41M005-26
	ICS	G11B007-24

JP 61258787 ECLA G11B007/243

AB The recording layers of the materials are composed of compds. [(SbxTe1-x)Ge1-y]1-zMz (x = 0.2-0.7; y = 0.4-0.8; z = 0.01-0.5; M = Al, Si, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Y, Zr, Nb, Mo, Ru, Rh, Pd, Ag, Cd, In, Sn, La, Ce, Pr, Nd, Sm, Gd, Tb, Dy, Hf, Ta, W, Au, Tl, Pd, Bi). The materials have high sensitivity to laser beam recording and provide high signal-to-noise ratio and stable bit error ratio. Thus, a grooved acrylic disk was vacuum-deposited using Sb, Te, Ge, and Sn sources to form a 400-.ANG. layer composed of [Sb0.35Te0.35Ge0.30]90Sn10 and was further deposited with a 200-.ANG. Sb layer. Recording using a 830 nm semiconductor laser (4 mW; 830 nm) produced information recording readable with a 1.2 mW beam of the same laser, with carrier-to-noise ratio 52 dB at 30 kHz band width and with bit error ratio 3 .times. 10-5. These values were unchanged after 1 wk storage at 60.degree., 82% humidity. A control material having recording layer not contg. Sn showed large variation of bit error ratio by storage.

ST information recording quaternary alloy layer; optical recording bit error stability; laser information recording stable error

IT Recording materials
(optical, alloys for)

IT 108459-33-2 108459-34-3 108459-35-4 108459-36-5 108459-37-6
108459-38-7
RL: USES (Uses)
(optical recording material from)

L15 ANSWER 44 OF 44 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1973:46923 CAPLUS

DN 78:46923

ED Entered STN: 12 May 1984

TI Silver alloys resistant to sulfurization

IN Haritani, Hiroshi; Kawanishi, Ichikazu; Asahina, Michio

PA Suwa Seikosha Co., Ltd.

SO Jpn. Tokkyo Koho, 3 pp., Addn. to Japan. 70 15,618
CODEN: JAXXAD

DT Patent

LA Japanese

IC C22C

CC 56-2 (Nonferrous Metals and Alloys)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 46033387	B4	19710930	JP 1967-59555	19670918

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 46033387	IC	C22C

AB Ag alloys contg. Sn 4-10, In 0.5-2, Zn 0.2-3, Be, Te, Si, Cr, or Zr 0.01-0.5, and Al, Ge, or Sb 0.01-3 wt. % having good deep drawability are described.

ST silver alloy sulfur resistance; tin silver zinc alloy; indium silver zinc alloy; drawability silver tin alloy

IT Sulfurization and Sulfidization
(silver alloys resistant to)

IT ***37375-01-2***
RL: USES (Uses)
(sulfurization resistant, with good deep drawability)

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(FILE 'HOME' ENTERED AT 12:34:31 ON 19 OCT 2005)

FILE 'REGISTRY' ENTERED AT 12:34:38 ON 19 OCT 2005

L1 2040 S TE 2-25/MAC
L2 6718 S SB 4-44.5/MAC
L3 0 S SGE 10-31/MAC
L4 4770 S GE 10-31/MAC
L5 37992 S SN 0-20/MAC
L6 0 S L1 AND L2 AND L3
L7 10688 S TE/MAC
L8 14743 S GE/MAC
L9 17950 S SB/MAC

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L10             0 S NS/MAC
L11         54834 S SN/MAC
L12          3241 S L7 AND L8
L13          1835 S L12 AND L9
L14           146 S L13 AND L11

     FILE 'CAPLUS' ENTERED AT 12:38:02 ON 19 OCT 2005
L15            44 S L14

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COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                   131.13     179.92

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                       ENTRY    SESSION
CA SUBSCRIBER PRICE                                   -32.12     -32.12

STN INTERNATIONAL LOGOFF AT 12:38:54 ON 19 OCT 2005
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